TOWN OF KITTERY

200 Rogers Road, Kittery, ME 03904
Telephone: (207) 475-1323 | Fax: (207) 439-6806
Visit us: www.kitteryme.gov/planning-board

Town of Kittery
March 14, 2024

ITEM 3—5 Whipple Road—Major Site Plan — Preliminary Review
Action: accept site plan as complete. Schedule site walk/public hearing. Mike Sudak, on behalf of owner/applicants PB Real Estate Holdings LLC, request approval to construct a 3,400 square foot commercial facility containing a butcher's shop and restaurant, along with associated parking and utilities, on the property of 5 Whipple Road, Tax Map 9, Lot 134, in the Business Local (B-L) Zone.

PROCESS SUMMARY

REQ'D	ACTION	COMMENTS	STATUS
NO	Sketch Plan Acceptance/Approval	Not required for site plan review	N/A
YES	Planning board determination of completeness	Scheduled for 3/14/24	Pending
NO	Site Visit	Optional for planning board, required for planning staff	TBD
YES	Public Hearing	Required for Preliminary Site Plan or Subdivision Approval	TBD
YES	Preliminary Plan Approval		TBD
YES	Final Plan Review and Decision		TBD
Applicant: Prior to the signing of the approved Plan any **Conditions of Approval related to the Findings of Fact along with waivers and variances (by the BOA) must be placed on the Final Plan and, when applicable, recorded at the York County Registry of Deeds. PLACE THE MAP AND LOT NUMBER IN 1/4" HIGH LETTERS AT LOWER RIGHT BORDER OF ALL PLAN SHEETS.**			

OTHER PERMITS AND REQUIREMENTS

- State Fire Marshal NFPA #13 fire protection system approval.
- DEP construction permitting and site review.
- Driveway entrance permit with Public Works.
- Brownfield remediation planning through MDEP

PROJECT INTRODUCTION

This is the first preliminary review for a proposed restaurant and butcher shop on the property of 5 Whipple Road. Currently the site of a 1,328 sq ft auto repair facility, the parcel still contains a canopy and barrels from a former gas station that used to function on the property. The area is a mix of commercial and residential uses, with the parcel directly abutting a Town-owned piece of land to the north and the St. Raphael's Church to the south.

In conjunction with federally required brownfield remediation work, an old gas canopy on the property would be demolished, and the proposed butcher shop would be constructed in the footprint of the existing repair shop, with a 2,076 sq ft expansion of the current building to house a restaurant, both under the same ownership.

Planning board review is required because the applicant needs a modification to the landscape planter strip requirements in **§16.4.17.D.(4).** The applicant currently meets all stormwater requirements but is seeking relief, discussed further below. **Staff suggest plan acceptance at this time and recommend the planning board provide feedback on the requested modifications with the applicant to inform future revisions.**

Waivers Requested

1. Landscaping planter strip modification: the applicant is requesting a modification to reduce the depth of the planter strip from 15 feet to 10 feet along all rights-of-way, to ensure adequate space to meet parking requirements.
2. Landscaping planter strip waiver: the applicant is requesting a waiver from the vegetative planter strip along 68 feet of the frontage on Whipple Road, to allow the building to meet the maximum 20 foot front yard setback. The planter strip minimum directly contradicts the maximum front yard setback standard in this zone. Additionally, moving the building further from Whipple Road would interrupt existing water and sewer utility lines north of the proposed footprint.
    a. The applicant proposes to provide a thin landscape strip between the proposed building and required sidewalks along Whipple Road, using a mulched planting bed to create elevated screening with the minimal space available.
3. Street tree minimum modification: the applicant is required to provide a minimum of 13 street trees due to the amount of frontage on the site. The applicant wishes to discuss the potential of relief on this item with the board, due to the small size of the lot and concern that the mature tree canopies would block each other.
    a. The applicant proposes additional low-elevation landscaping features that would not interfere with the mature trees, to provide adequate screening of the site that would compensate for the reduced number of trees.
4. Stormwater management modification: the applicant wishes to discuss relief on a standard requiring 100% of stormwater be treated on-site, which is within the planning board's jurisdiction as the applicant proposes a development with only 70% impervious surface. Currently, 0% of stormwater is treated on the property. Providing partial relief on the modification would still allow for an improvement of stormwater management, while also allowing the applicant to provide more green space and utilize low-impact-development rather than large gray infrastructure systems.

Staff Comments

Listed below are additional comments provided by staff in addition to general review of standards:

1. Due to the small size of the proposed business, planning board review is only required because of the necessary waiver requests. Per the site plan criteria standards in **§16.7.5,** because the project proposes a commercial property of less than 5,000 square feet and disturbance of less than 1 acre of land, the project would otherwise be considered a minor site plan.
2. The applicant has currently been working with MDEP regarding treatment of all hazardous residue on the property. Included in the application is a report from MDEP listing the current measures implemented and next steps required as part of remediation to be completed before the proposed businesses may be in use on the property.
3. The current stormwater management report proposed does meet 100% of stormwater requirements and has been found sufficient by third-party engineering review. The applicant is requesting relief to allow for the opportunity to allow for more open space in-lieu of costly stormwater retention systems.

PROJECT ANALYSIS

Staff reviewed the application and provided materials and have provided their determination on the requirements and standards below. All requirements that have not been met or require further discussion are highlighted.

Code Ref.	§16.4 Land Use Zone Standards	
	Standard	Determination
§16.4.17.B/C.	Permitted/Special Exception Uses	The proposed uses are permitted.
§16.4.17.D.(1).(c).	An off-site parking agreement may be pursued by the applicant if they so choose	The applicant appears to currently meet the parking standard on-site, described further below
§16.4.17.D.(1).(g).	Lot size: no minimum	It appears the standard is satisfied.
§16.4.17.D.(1).(h).	Street frontage: no minimum	It appears the standard is satisfied.
§16.4.17.D.(1).(i).	Front setback setbacks: 20 ft maximum	By expanding the existing structure towards the Whipple Road ROW, the proposed development reduces the structure's nonconformance. It appears the standard is satisfied.

§16.4.17.D.(1).(j).	Rear and side setbacks: 10 ft minimum NOTE: when abutting a residential district or single family use, minimum setback is 15 feet	It appears the standard is satisfied.
§16.4.17.D.(1).(k).	Building height: 40 feet maximum NOTE: solar apparatus are excluded from the height maximum.	It appears the standard is satisfied.
§16.4.17.D.(1).(l).	Impervious surface: no maximum	It appears the standard is satisfied
§16.4.17.D.(1).(m).	100% of stormwater must be treated on-site. NOTE: The planning board may provide relief to this standard if the applicant proposes less than 70% of the site to be impervious.	The standard currently appears to be satisfied. The applicant plans to speak to the planning board to receive relief on the stormwater requirements. The applicant proposes to reduce impervious surface from ~92.5% to 70%, meaning this modification would be in the planning board's jurisdiction.
§16.4.17.D.(1).(n).	Open space: 15% minimum	It appears the standard is satisfied.
§16.4.17.D.(2).(a)..	• Parking must be located to side or rear of buildings	It appears the standard is satisfied.
§16.4.17.D.(2).(c).	A Landscaping plan is required by a registered landscape architect. Plantings that do not survived must be replaced within one year.	A landscaping plan is not required until final review. The applicant has provided a rough landscaping plan and is requesting feedback from the board before solidifying the plan.

§16.4.17.D.(2).(c).[3].	Parking areas of 5 or more lots requires one of the following landscaping options: • Any combination of trees, shrubs, grasses, or plants in a planting bed 8 feet wide. • One tree per 25 feet of street frontage, 12 feet high at time of planting, in a planting bed at least 8 feet wide. • Fencing no more than 6 feet high.	A landscaping plan is not required until final review. The applicant has provided a rough landscaping plan and is requesting feedback from the board before solidifying the plan.
§16.4.17.D.(2).(d).	10% of the parking area must be landscaped	A landscaping plan is not required until final review. The applicant has provided a rough landscaping plan and is requesting feedback from the board before solidifying the plan.
§16.4.17.D.(3).	Building design standards: • Loading docks and overhead doors must be located on the side or rear of the building.	It appears the standard is satisfied.
§16.4.17.D.(4).(a).	A 15 feet vegetative planter strip is required adjacent to the right of way of all public roads or sidewalk. Vegetative strip requirements: • The entire landscape must be vegetated with a combination of shrubs, perennials, and ornamental grasses. • One tree for each 25 feet of street frontage. • Plantings that die must be replaced within one year	The applicant is requesting a modification to the planter strip depth, listed above.
§16.4.17.D.(4).(c).	Outdoor service and storage areas must be located to the side or rear of the building, and require screening by a 6-foot-tall fence	It appears the standard Is satisfied.

§16.4.17.D.(4).(d).	Sidewalks are required to internally connect the property to all other abutting properties.	The standard appears to be satisfied.
§16.4.17.D.(4).(e).	Open space: 15% minimum NOTE: the planning board may allow landscaping to be considered a part of the open space to meet the minimum.	The standard appears to be satisfied.
Code Ref.	§16.5 General Performance Standards	
	Standard	Determination
§16.5.14.B	The property fronts a right-of-way on three sides. Because Title 16 has no definition for a multiple-fronted lot, the standards for a corner lot in **16.3.2** are the only option be used. One road providing primary access will be considered the "front yard," while all others are considered "side yards." Such side yards must still meet the requirements of the front yard setback, but standards related to frontage do not apply.	The Whipple Road ROW is to be considered the main access driveway and will be considered the road providing "frontage."
§16.5.20	Any outdoor dining proposed would need to meet the standards. Additional parking is required for outdoor dining areas 1,000 sq ft or greater.	The applicant states the rough landscaping area shows a proposed outdoor dining area is approximately 750 sq ft, meaning additional parking is not required. However, the applicant currently exceeds the minimum parking requirement. The size of the outdoor dining area should be notated in future revisions of the plan.
§16.5.10	Essential Services	Water and wastewater have both confirmed capacity for the project. Existing municipal wastewater systems can be used to divert post-treatment stormwater.
§16.7.11.F.(e).	Parking requirements: • 1 space for the warehousing use • 5 spaces for the retail use	The plan appears to exceed the minimum number of spaces required by 1. The plan also meets the

	• 19 spaces for the restaurant use Total spaces: 24	minimum number of ADA spaces required.
§13.1.6.5/§13.1.6.6	Sewer impact fees and special sewer entrance fees	To be calculated by Code Enforcement before Preliminary plan approval
Code Ref.	§16.7.10 Site Plan Requirements	
	Standard	Determination
§16.7.10.C.(4).(a-i).	• Paper plan sheets no smaller than 11" x 17" • Scale of drawing no greater than 1 inch = 30 feet • Code block in right-hand corner • Standard boundary survey of existing conditions • Compass with arrow pointing true north • Locus map of property • Vicinity map and aerial photograph • Surveyed acreage of parcel(s), rights-of-way, wetlands, and amount of street frontage • Names and addresses of owners of record abutting property	Provided
§16.7.10.C.(4).(j).	Existing conditions survey including all identified structures, natural resources, rights-of-way, and utilities located on and within 100 feet of the property.	Provided
§16.7.10.C.(4).(k).	• Proposed development area including: • Location and detail of proposed structures and signs • Proposed utilities including power, water, and sewer. • Sewage facilities type and placement. • Domestic water source • Lot lines, rights-of-way, and street alignments • Road and other paved area plans • Existing and proposed setbacks • Storage areas for waste or hazardous materials • Topographic contours of existing contours and finished grade elevations	Provided

	• Locations and dimensions of artificial features such as pedestrian ways, sidewalks, curb cuts, driveways, fences, retaining walls,	
§16.7.10.C.(4).(l).	Natural features or site elements to be preserved.	Provided
§16.7.10.C.(4).(m).	Identified property encumbrances.	Provided
§16.7.10.C.(4).(n).	Kittery Water District approval letter.	Provided
§16.7.10.C.(4).(o).	Erosion and sedimentation control plan.	Provided
§16.7.10.C.(4).(p).	Stormwater management plan and drainage analysis.	Provided
§16.7.10.C.(4).(q).	Soil survey.	Provided
§16.7.10.C.(4).(r).	Trip generation estimates.	Provided
§16.7.10.C.(4).(s).	Traffic impact analysis.	Neither proposed number of parking spaces nor estimated trip generation trigger requirements for a traffic impact analysis.
§16.7.10.C.(4).(t).	Test pit analysis.	Not applicable
§16.7.10.C.(4).(u).	Approval letter from Town sewage.	Provided
§16.7.10.C.(4).(v).	Evaluation of development by Technical Review Committee department heads.	Provided
§16.7.10.C.(4).(w).	Additional submissions as required: • EPA brownfield remediation report	Provided

DISCUSSION, NEXT STEPS, AND RECOMMENDATIONS

The purpose of the first meeting of a preliminary site plan is to determine the completeness of the application, provide specific feedback to the applicant, and determine whether the plan is ready to schedule a public hearing. Staff suggest the planning board focus their discussion on the requested waivers, as their feedback will help the applicant complete the required landscaping plan and other details in future revisions. Staff maintain that all requested modifications are within the authority of the board, and believe the plan is ready to receive acceptance and scheduling of a public hearing.,

RECOMMENDED MOTIONS

Below are recommended motions for the Board's use and consideration:

Motion to accept the application as complete

Move to accept the preliminary site plan by Mike Sudak, on behalf of owner/applicants PB Real Estate Holdings LLC.

Motion to schedule a site walk

Move to visit the site of the preliminary site plan by Mike Sudak, on behalf of owner/applicants PB Real Estate Holdings LLC.

Motion to schedule a public hearing

Move to schedule a public hearing for the preliminary site plan by Mike Sudak, on behalf of owner/applicants PB Real Estate Holdings LLC.

ATTAR
ENGINEERING, INC
CIVIL · STRUCTURAL · MARINE

Mr. Jason Garnham, Director of Planning and Development
Mr. Maxim Zakian, Town Planner
Town of Kittery, Maine
200 Rogers Road
Kittery, Maine 03904

March 6th, 2024
Project No. 23088

RE: Minor Site Plan Review Application – Waiver Request Narratives
Maine Meat Butcher & Restaurant
5 Whipple Road, Kittery, Maine (Tax Map 9, Lot 134)

Dear Mr. Zakian & Mr. Garnham:

On behalf of PB Real Estate Investments, LLC. and Jarrod Spangler, I have enclosed for your review and consideration a Landscaping Plan to be added to the previously-submitted Plan Set for Site Plan Review. This plan is to be accompanied by the following narrative whereby the Applicant is requesting for relief from the described ordinance provisions with the Planning Board's concurrence:

- §16.4.17.D.(4).(a) – Landscaping Requirements of the B-L Zoning District

  Excerpt: *Landscape planter strip. A vegetated landscape planter strip must be provided a minimum of 15 feet in depth adjacent to the right-of-way of all public roads or the sidewalk if it already exists. If a sidewalk does not yet exist on-site but sidewalks do exist on adjacent properties, the planting strip must be located so that it does not interfere with connectivity to existing sidewalks. Planting strips which demonstrate LID functionality to assist in stormwater capture are preferred. The Planning Board may reduce the required width of the landscape planting strip is provided in front of the parcel and the area between the front property line and the front wall of the building will be designed and used as a pedestrian space, outdoor dining as defined by this title, or a seating area.*

  - The Applicant would like to humbly request the Planning Board grant relief from this provision in two separate ways. First, to reduce the overall depth from 15 feet to 10 feet adjacent to all adjacent rights-of-way. Second, to remove the planter strip requirement for a length of 68' along the Whipple Road frontage to accommodate the proposed building addition.

  - The subject parcel is a corner lot, meaning that this provision would apply from the rights-of-way of both Whipple Road and Rogers Road. With the amount of combined frontages along this parcel and the parking requirements of the proposed use, strict enforcement of the 15' planter strip depth would result in a parking deficiency and likely result in a parking waiver instead. This planter strip would include in-part the stormwater management measures for the proposed development – treebox bioretention vaults.

  - Strict compliance with the full depth of landscape planter strip is somewhat contradicted by the frontyard setback of the B-L zoning district, which is a

maximum measurement instead of a minimum one. Since this development proposes to retain and renovate the existing building, enforcement of both the frontyard setback and planter strip requirements would create an incredibly limited envelope available for the proposed building addition.

- In the existing condition, the subject parcel and its immediate surroundings include a raised and curbed sidewalk and grassed esplanade. These elements will be retained and expanded through the proposed development, extending the sidewalk along both the Whipple and Rogers frontages over to both proposed entrances. This allows continuity of the pedestrian corridor in the area of the proposed building addition. The thin landscape strip between the proposed building addition and the existing sidewalk to be preserved shall have a raised mulched planting bed with perennials installed.

- §16.4.17.D.(4).(a).[2] – Streetside Tree Requirements

  Excerpt: *Street-side trees. A minimum of one tree must be planted for each 25 feet of street frontage. The trees may be spaced along the frontage or grouped or clustered to enhance the visual quality of the site. (The trees must be a minimum 2.5-inch caliper and be at least 12 feet high at the time of planting). ...Existing large healthy trees must be preserved if practical and will count toward this requirement. Trees located within the public right-of-way must not exceed 20 feet in height at maturity.*

  - Prior to the filing of this application for Site Plan Review, the Applicant discussed with Town Staff the interpretation of this ordinance provision relative to the parcel's corner lot nature. Town Staff has decided that Whipple Road is the "frontage" that shall be declared for the purposes of calculating the streetside tree requirements of this provision. General Note #3 on Sheet #1 reflects this declaration, and the resulting calculation calls for 13 streetside trees to be planted.

  - There is a healthy red maple existing along the Whipple Road frontage, which the proposed development has been designed around to preserve, changing the tree requirement from 13 to 12. Additionally, the proposed stormwater management measures for this development are treebox bioretention vaults, which shall both be positioned along the Whipple Road frontage and which shall include plantings of adequate size to satisfy the Town's requirements. This results in a balance of 10 additional trees.

  - The Applicant would like to discuss with the Planning Board some options for reducing or altering this remaining balance of streetside tree plantings. The attached Landscaping Plan depicts proposed locations of all tree plantings, along with their rough canopy spread at mature height. With how large the tree plantings are required to be at the time of installation, the Applicant expects that strict enforcement of the streetside tree planting requirements would cause tree canopies to quickly begin interfering with one another post-occupancy.

  - Should this planting requirement be reduced by even a few trees, it would result in significant additional space along the frontages for lower landscaping features while also allowing mature trees to not interfere with one another. Alternatively, though there is no provision in the B-L zone for visual screening, the Planning Board could consider changing a portion of the streetside tree requirements to be evergreen plantings, that could be situated along the western edge of the proposed parking lot to shield the Rogers and Whipple intersection from headlight glare.

- §16.4.17.D.(1).(l) & (m) – Stormwater Management Requirements

  Excerpt: *Impervious surface: No maximum allowable, but all open space, landscaping, setbacks, buffers, screening and street tree requirements apply. For development that is proposing 70% or more impervious surface, the stormwater requirements in Subsection D(1)(m) below may not be modified.*

  Stormwater: All new development must use LID (low-impact development) and BMP (best management practices), based on Maine DEP's Maine Stormwater Best Management Practices Manual Volumes I through III, as amended from time to time, to manage 100% of the total stormwater generated on-site. The stormwater report and plan demonstrating that this requirement is met must be included with the application at the time of submission. A request for a modification may be submitted to the Planning Board, but it is incumbent on the applicant to prove to the Planning Board's satisfaction that such a modification is necessary. The Town reserves the right to submit such modification requests for independent engineering review at the applicant's expense. The Board may also require additional landscaping/plantings and/or LID design features when granting such concessions.

  - As previously described, the existing condition of the subject parcel is a former gas station use, which is partially occupied at present by the Best Auto vehicle service and repair shop. The remainder of the site is almost entirely (92+%) impervious cover, with a combination of concrete storage tanks, concrete fueling islands with canopy, compacted gravel, and patchwork asphalt. The parcel also has in-line portions of the municipal closed stormwater system located within the property, carrying flows from the northern surrounding streets and directing them into the Whipple Road right-of-way.

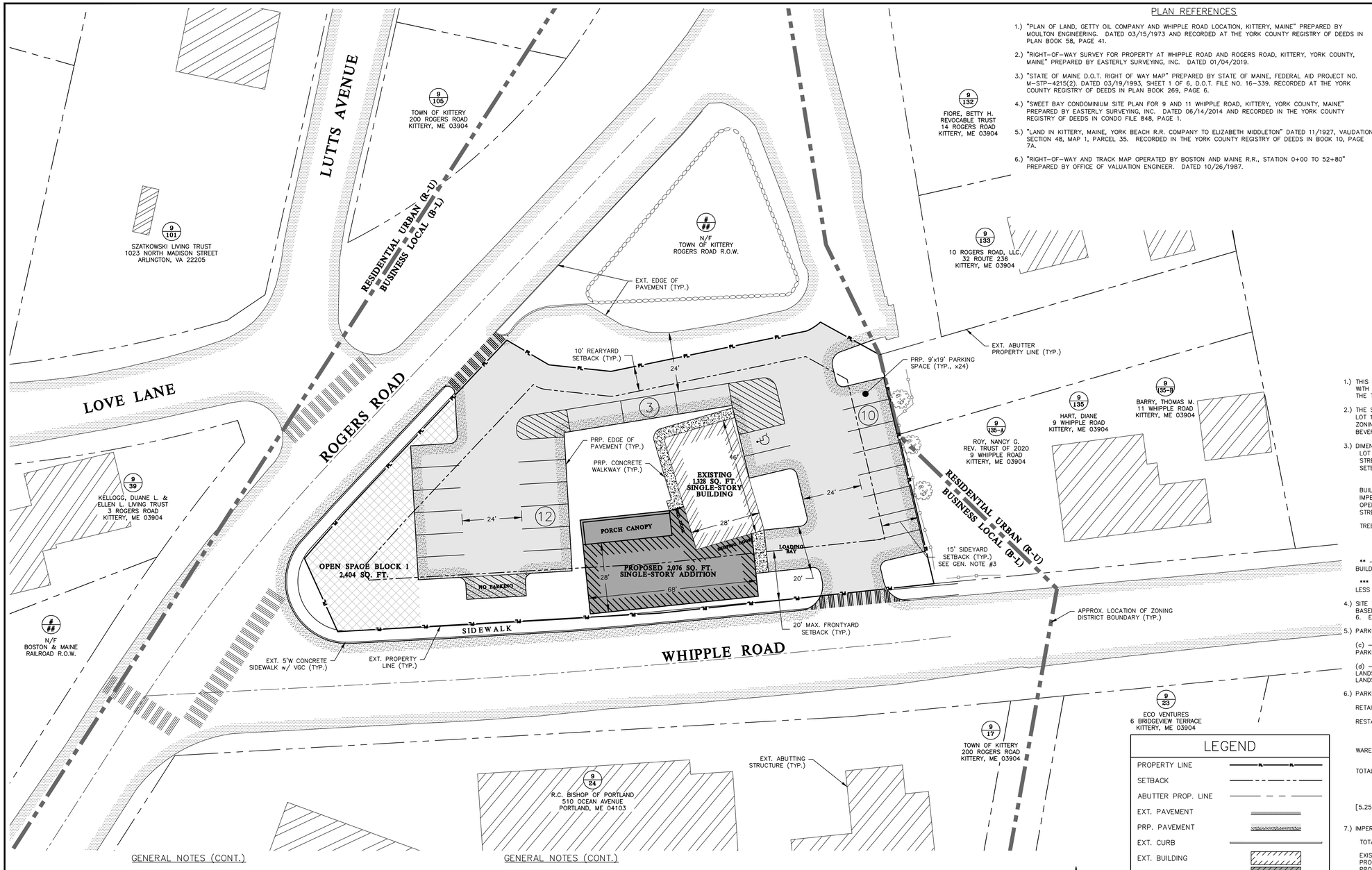
  - The Applicant proposes to significantly reduce (by roughly 25%) the existing impervious cover, including removing all of the amenities associated with the former gas station use. This removed impervious shall be replaced with the roadside landscape elements discussed above, along with several greenspace elements in the center of the parcel that shall contain a combination of planting beds, lawn, and seasonal outdoor seating.

  - While the current Plan Set depicts 100% on-site stormwater management via treebox bioretention vaults, the Applicant would like to discuss with the Planning Board the ability to reduce some of these stormwater management measures in lieu of additional landscape plantings or other LID measures as desired. The existing municipal closed system shall be preserved through this development, and the change in cover type includes significantly more greenspace, which will provide natural buffers and increased opportunity for infiltration. Several elements of MDEP's LID Practices (minimizing impervious areas, minimizing connected impervious areas, and maintaining times of concentration) are all accomplished by the improvements proposed with this development.

We look forward to discussing this project with Town Staff at the March 14th Planning Board meeting. If any additional information is required, please contact me. Thank you for your assistance.

Sincerely,

Michael J. Sudak, E.I.
23088 Cover 06Mar2024.doc



PLAN REFERENCES

1.) "PLAN OF LAND, GETTY OIL COMPANY AND WHIPPLE ROAD LOCATION, KITTERY, MAINE" PREPARED BY MOULTON ENGINEERING. DATED 03/15/1973 AND RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN PLAN BOOK 58, PAGE 41.

2.) "RIGHT-OF-WAY SURVEY FOR PROPERTY AT WHIPPLE ROAD AND ROGERS ROAD, KITTERY, YORK COUNTY, MAINE" PREPARED BY EASTERLY SURVEYING, INC. DATED 01/04/2019.

3.) "STATE OF MAINE D.O.T. RIGHT OF WAY MAP" PREPARED BY STATE OF MAINE, FEDERAL AID PROJECT NO. M-STP-4215(2). DATED 03/19/1993, SHEET 1 OF 6, D.O.T. FILE NO. 16-339. RECORDED AT THE YORK COUNTY REGISTRY OF DEEDS IN PLAN BOOK 269, PAGE 6.

4.) "SWEET BAY CONDOMINIUM SITE PLAN FOR 9 AND 11 WHIPPLE ROAD, KITTERY, YORK COUNTY, MAINE" PREPARED BY EASTERLY SURVEYING, INC. DATED 06/14/2014 AND RECORDED IN THE YORK COUNTY REGISTRY OF DEEDS IN CONDO FILE 848, PAGE 1.

5.) "LAND IN KITTERY, MAINE, YORK BEACH R.R. COMPANY TO ELIZABETH MIDDLETON" DATED 11/1927, VALIDATION SECTION 48, MAP 1, PARCEL 35. RECORDED IN THE YORK COUNTY REGISTRY OF DEEDS IN BOOK 10, PAGE 7A.

6.) "RIGHT-OF-WAY AND TRACK MAP OPERATED BY BOSTON AND MAINE R.R., STATION 0+00 TO 52+80" PREPARED BY OFFICE OF VALUATION ENGINEER. DATED 10/26/1987.

LOCATION MAP

APPROX. SCALE: 1" = 2,000'

GENERAL NOTES

1.) THIS PLAN DEPICTS THE DEVELOPMENT OF THE SUBJECT PARCEL INTO A BUTCHER SHOP AND RESTAURANT WITH ASSOCIATED ON-SITE PARKING. THE ALLOCATED PARKING HAS BEEN DESIGNED IN ACCORDANCE WITH THE TOWN OF KITTERY §16.7.11.F: "PARKING AND LOADING".

2.) THE SUBJECT PARCEL, LOCATED AT THE CORNER OF WHIPPLE ROAD AND ROGERS ROAD, IS IDENTIFIED AS LOT 134 ON MAP 9, CONSISTS OF 0.51 ACRES IN AREA, AND IS LOCATED IN THE BUSINESS-LOCAL (B-L) ZONING DISTRICT. THERE ARE NO OVERLAY ZONES. "RESTAURANT" AND "SPECIALTY FOOD AND/OR BEVERAGE FACILITY" ARE BOTH PERMITTED USES IN THE B-L ZONE AS PER §16.4.17.B.

3.) DIMENSIONAL REQUIREMENTS FOR THE B-L ZONING DISTRICT AS PER §16.4.17.D.(1):

LOT SIZE:	NO MINIMUM, PROVIDED §16.4.17.D.(1).(g) IS MET
STREET FRONTAGE:	NO MINIMUM, PROVIDED §16.4.17.D.(1).(h) IS MET
SETBACKS:	20' FRONTYARD (MAXIMUM) 15' SIDEYARD (MINIMUM)** 15' REARYARD (MINIMUM)**
BUILDING HEIGHT:	40' (MAXIMUM)
IMPERVIOUS SURFACE:	NO MAXIMUM, PROVIDED §16.4.17.D.(1).(i) IS MET
OPEN SPACE:	15% LOT AREA (MINIMUM)***
STREET-SIDE TREES:	1 TREE PER 25' STREET FRONTAGE (1 EXISTING)

TREE PLANTING OBLIGATIONS:
STREET FRONTAGE (WHIPPLE ROAD) = [481' FRONTAGE / 25'] = 19.24 TREES REQUIRED
PARKING SPACES (PER GEN. NOTE #11) = [25 SPACES TOTAL / 8] = 3.13 TREES REQUIRED
[19.24 + 3.13 - 1 EXISTING TREE] = 21.36 => 22 TREES REQUIRED [XX PROVIDED]

** - PER §16.4.17.D.(1).(j): WHERE SIDE/REAR SETBACKS ABUT A RESIDENTIAL DISTRICT, 15' OR 50% BUILDING HEIGHT IS REQUIRED, WHICHEVER IS GREATER

*** - PER §16.4.17.D.(4).(e): REQUIRED AMOUNT OF OPEN SPACE IS REDUCED TO 10% MINIMUM FOR LOTS LESS THAN 40,000 SQ. FT. IN SIZE (22,240 SQ. FT. EXISTING)

4.) SITE TOPOGRAPHY, EXISTING GROUND SURFACE CONDITIONS, AND BOUNDARY MONUMENTATION ARE DEPICTED BASED ON STATE OF MAINE ORTHOIMAGERY, STATE AND TOWN GIS IMAGERY, AND PLAN REFERENCES 1 THRU 6. EXISTING CONDITIONS OF ABUTTING PROPERTIES ARE APPROXIMATE. VERTICAL DATUM IS NAVD88.

5.) PARKING STANDARDS SPECIFIC TO THE B-L ZONING DISTRICT AS PER §16.4.17.D.(2):

(c) - SCREENING THROUGH THE USE OF PLANTINGS AND/OR FENCING IS REQUIRED FOR ALL NEW OR REVISED PARKING ABUTTING PUBLIC STREETS AND/OR SINGLE-FAMILY RESIDENTIAL USES OR RESIDENTIAL ZONES.

(d) - A MINIMUM OF 10% OF ANY SURFACE PARKING AREA CONSISTING OF 10 OR MORE SPACES MUST BE LANDSCAPED WITH TREES AND VEGETATED ISLANDS. THIS REQUIREMENT IS IN ADDITION TO OTHER REQUIRED LANDSCAPING AND STREET TREE REQUIREMENTS.

6.) PARKING CALCULATION AS PER §16.7.11.F.(4):

RETAIL STORE (BUTCHER SHOP):	1 SPACE / 175 SQ. FT. GROSS FLOOR AREA
RESTAURANT:	1 SPACE / 3 SEATS (SEATING IS CALCULATED BY DIVIDING THE TOTAL FLOOR AREA WITH CUSTOMER ACCESS BY 15)
WAREHOUSE AND STORAGE:	1 SPACE / 500 SQ. FT. GROSS FLOOR AREA, LESS PORTIONS DEDICATED TO RETAIL SALES OR OFFICE AREA
TOTAL PARKING REQUIREMENT:	[934 SQ. FT. RETAIL / 175] = 5.25 SPACES [280 SQ. FT. STORAGE / 500] = 0.56 SPACES [838 SQ. FT. RESTAURANT / 15] = 55.87 SEATS [55.87 SEATS / 3] = 18.62 SPACES

[5.25 + 0.56 + 18.62] = 24.43 => 24 SPACES REQUIRED PER §16.7.11.F.(4).(d)
(25 PROPOSED, 1 ADA)

7.) IMPERVIOUS COVERAGE CALCULATION:

TOTAL PARCEL AREA = 22,240 SQ. FT.

EXISTING BUILDING FOOTPRINT = 1,328 SQ. FT.
PROPOSED BUILDING FOOTPRINT = 2,227 SQ. FT. (INCLUDES PORCH CANOPY)
PROPOSED PEDESTRIAN WALKWAYS = 340 SQ. FT.
PROPOSED PARKING & LOADING = 11,832 SQ. FT.
[1,328 + 2,227 + 340 + 11,832] = 15,727 SQ. FT. TOTAL IMPERVIOUS

[15,727 / 22,240] = 70.7% > 70%
* - SEE GENERAL NOTE #3 FOR ADDITIONAL REQUIREMENTS

8.) OPEN SPACE CALCULATION:

TOTAL PARCEL AREA = 22,240 SQ. FT.

OPEN SPACE BLOCK 1 = 2,404 SQ. FT.
[2,404 / 22,240] = 10.8% > 10% => OK

-- GENERAL NOTES CONTINUED ELSEWHERE ON SHEET 1 --

GENERAL NOTES (CONT.)

9.) THE CONTRACTOR MUST CONTACT DIG SAFE AND ALL LOCAL UTILITY DISTRICTS PRIOR TO THE START OF CONSTRUCTION TO VERIFY THE LOCATION OF EXISTING SUBSURFACE UTILITIES AND CONDITIONS. LOCATING AND PROTECTING ANY UNDERGROUND OR ABOVE-GROUND UTILITY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

10.) THIS DEVELOPMENT IS CURRENTLY SERVICED BY AND PROPOSES TO CONTINUE TO BE SERVICED BY TOWN WATER (KITTERY WATER DISTRICT) AND TOWN SEWER (KITTERY SEWER SERVICES. ALL UTILITY MATERIALS, SIZES, AND CONSTRUCTION PRACTICES SHALL BE IN ACCORDANCE WITH STANDARDS OF THE KITTERY WATER DISTRICT (KWD) AND KITTERY SEWER SERVICES (KSS).

11.) PARKING LANDSCAPING REQUIREMENTS PER §16.4.17.D.(4).(a) AND §16.7.11.F.(4).(g):

A VEGETATED LANDSCAPE PLANTER STRIP MUST BE PROVIDED A MINIMUM OF 15' IN DEPTH ADJACENT TO THE RIGHT-OF-WAY OF ALL PUBLIC ROADS OR THE EXISTING SIDEWALK. THE PLANNING BOARD MAY REDUCE THE REQUIRED WIDTH IF THE AREA BETWEEN THE FRONT PROPERTY LINE AND THE FRONT WALL OF THE BUILDING WILL BE DESIGNED AND USED AS A PEDESTRIAN SPACE, OUTDOOR DINING, OR SEATING AREA.

STREET-SIDE TREES MAY BE SPACED ALONG THE FRONTAGE OR GROUPED/CLUSTERED TO ENHANCE THE VISUAL QUALITY OF THE SITE. THE TREES MUST BE A MINIMUM OF 2½"ø CALIPER AND BE AT LEAST 12' HIGH AT THE TIME OF PLANTING. EXISTING LARGE HEALTHY TREES MUST BE PRESERVED IF PRACTICAL AND WILL COUNT TOWARDS THIS REQUIREMENT. ANY REQUIRED PLANTINGS THAT DO NOT SURVIVE MUST BE REPLACED WITHIN ONE YEAR - THIS REQUIREMENT DOES NOT EXPIRE AND RUNS WITH THE LAND.

PARKING LANDSCAPING IS REQUIRED FOR PARKING AREAS CONTAINING 10 OR MORE PARKING SPACES AND MUST HAVE AT LEAST 1 TREE/8 SPACES. SUCH TREES ARE TO BE LOCATED EITHER WITHIN THE LOT OR WITHIN 5' OF IT. SUCH TREES ARE TO BE AT LEAST 1½"ø WITH NO LESS THAN 25 SQ. FT. OF UNPAVED SOIL OR PERMEABLE SURFACE AREA PER TREE.

12.) THE CLOSEST FIRE HYDRANT IS LOCATED ACROSS THE STREET ON ROGERS ROAD, APPROXIMATELY 140' FROM THE CLOSEST CORNER OF THE PROPOSED ADDITION.

13.) AS PER §16.4.17.D.(4).(c), PROPOSED SERVICE AREAS FOR DUMPSTERS, COMPRESSORS, GENERATORS, AND SIMILAR ITEMS SHALL BE SURROUNDED AND SCREENED BY FENCING A MINIMUM OF 6' HIGH AND CONSTRUCTED OF SIMILAR MATERIALS TO THE SURROUNDING BUILDINGS.

14.) HOURS OF OPERATION:

MAINE MEAT (BUTCHER SHOP USE)

MONDAY & TUESDAY:	CLOSED
WEDNESDAY THRU SATURDAY:	11:00A - 6:00P
SUNDAY:	11:00A - 3:00P

TONGUE 'N CHEEK (RESTAURANT USE)

MONDAY & TUESDAY:	CLOSED
WEDNESDAY & THURSDAY:	11:00A - 8:00P
FRIDAY & SATURDAY:	11:00A - 9:00P
SUNDAY:	11:00A - 8:00P

INDEX OF SHEETS

LEGEND

PROPERTY LINE
SETBACK
ABUTTER PROP. LINE
EXT. PAVEMENT
PRP. PAVEMENT
EXT. CURB
EXT. BUILDING
PRP. BUILDING
PRP. PARKING
EXT. CROSSWALK
PRP. CROSSWALK
EXT. STONEWALL
PRP. OPEN SPACE
EXT. ZONING BOUNDARY

GRID N

GRAPHIC SCALE
0 20 40 60 80 (FEET)

NO.	DESCRIPTION	DATE
	REVISIONS	

KENNETH A. WOOD
No. 5992
STATE OF MAINE
LICENSED PROFESSIONAL ENGINEER

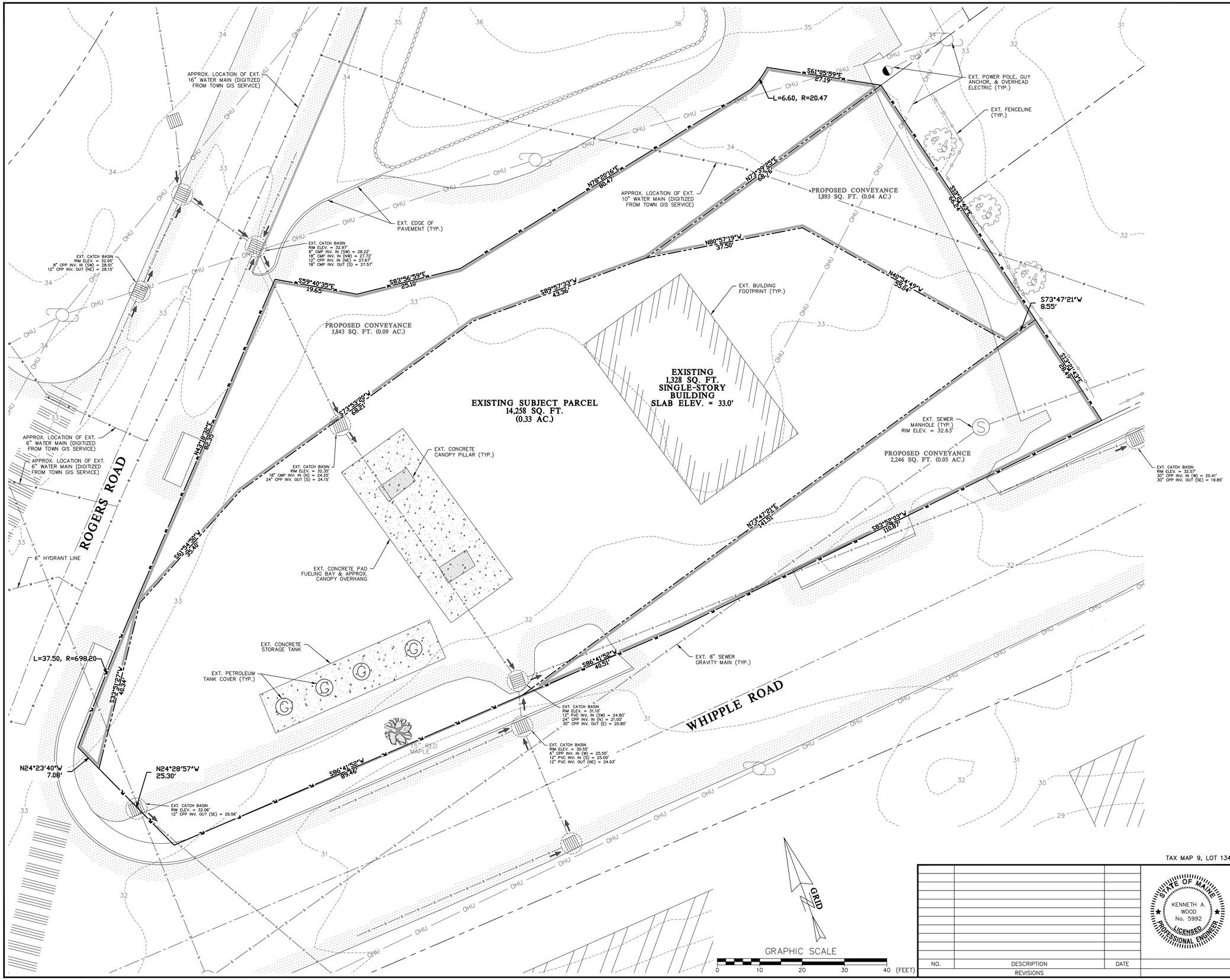
TAX MAP 9, LOT 134

OVERALL SITE PLAN
MAINE MEAT BUTCHER & RESTAURANT
5 WHIPPLE ROAD, KITTERY, MAINE

FOR: JARROD SPANGLER
7 WALLINGFORD SQUARE, SUITE 104
KITTERY, ME 03904

ATTAR ENGINEERING, INC.
CIVIL ◆ STRUCTURAL ◆ MARINE ◆ SURVEYING
1284 STATE ROAD - ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

SCALE:	APPROVED BY:	DRAWN BY:
1" = 20'		MJS
DATE:		REVISION DATE:
12/28/23		- : -
JOB NO: 23088	FILE: 5 WHIPPLE BASE.DWG	SHEET: 1



LEGEND

- PROPERTY LINE
- SETBACK
- ABUTTER PROP. LINE
- EXT. PAVEMENT
- EXT. CURB
- EXT. BUILDING
- EXT. CROSSWALK
- EXT. STONEWALL
- EXT. WATER LINE — W
- EXT. SEWER LINE — S
- EXT. SEWER MANHOLE Ⓢ
- EXT. FORCE MAIN — FM
- EXT. STORM LINE — D
- EXT. CATCH BASIN
- EXT. MAJOR CONTOUR ---------- XXX ----------
- EXT. MINOR CONTOUR ---------- XXX ----------
- DRAINAGE FLOW ARROW

TAX MAP 9, LOT 134

NO.	DESCRIPTION	DATE
	REVISIONS	

STATE OF MAINE
KENNETH A. WOOD
No. 5992
LICENSED PROFESSIONAL ENGINEER

EXISTING CONDITIONS PLAN
MAINE MEAT BUTCHER & RESTAURANT
5 WHIPPLE ROAD, KITTERY, MAINE

FOR: JARROD SPANGLER
7 WALLINGFORD SQUARE, SUITE 104
KITTERY, ME 03904

ATTAR ENGINEERING, INC.
CIVIL ◆ STRUCTURAL ◆ MARINE ◆ SURVEYING
1284 STATE ROAD – ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

SCALE:	APPROVED BY:	DRAWN BY:
1" = 10'		MJS
DATE:		REVISION DATE:
12/28/23		– : –
JOB NO: 23088	FILE: 5 WHIPPLE BASE.DWG	SHEET: 2

MAP 9, LOT 134

EXISTING
1,328 SQ. FT.
SINGLE-STORY
BUILDING
SLAB ELEV. = 33.0'

PROPOSED 2,076 SQ. FT.
SINGLE-STORY ADDITION
SLAB ELEV. = 33.0'

PORCH CANOPY

ROGERS ROAD

WHIPPLE ROAD

EXT. CATCH BASIN
RIM ELEV. = 32.95'
8" CPP INV. IN (SW) = 28.51'
12" CPP INV. OUT (NE) = 28.15'

EXT. CATCH BASIN
RIM ELEV. = 32.97'
8" CMP INV. IN (SW) = 28.22'
18" CMP INV. IN (NW) = 27.72'
12" CPP INV. IN (NE) = 27.67'
18" CMP INV. OUT (S) = 27.57'

EXT. CATCH BASIN
RIM ELEV. = 32.35'
18" CMP INV. IN (N) = 24.25'
24" CPP INV. OUT (S) = 24.15'
PRP. SWAP TO SOLID DMH COVER

EXT. CATCH BASIN
RIM ELEV. = 32.06'
12" CPP INV. OUT (SE) = 29.56'

EXT. CATCH BASIN
RIM ELEV. = 30.55'
6" CPP INV. IN (W) = 25.55'
12" PVC INV. IN (S) = 25.00'
12" PVC INV. OUT (NE) = 24.93'

EXT. CATCH BASIN
RIM ELEV. = 31.10'
12" PVC INV. IN (SW) = 24.80'
24" CPP INV. IN (N) = 21.00'
30" CPP INV. OUT (E) = 20.80'
PRP. SWAP TO SOLID DMG COVER
NEW 12" INV. IN (W) = 28.20'

EXT. CATCH BASIN
RIM ELEV. = 32.57'
30" CPP INV. IN (W) = 20.41'
30" CPP INV. OUT (SE) = 19.85'
NEW 12" INV. IN (W) = 28.00'

PRP. FILTERRA UNIT
(FTPD0608 SPEC)
10'W x 6'D VAULT
INLET ELEV. = 32.0'
12" INV. OUT = 28.42'

PRP. FILTERRA UNIT
(FTPD0606 SPEC)
8'W x 6'D VAULT
INLET ELEV. = 32.2'
12" INV. OUT = 28.62'

EXT. SEWER
MANHOLE (TYP.)
RIM ELEV. = 32.63'

DMH

15" RED MAPLE

1.5% SLOPE

3% SLOPE

LEGEND

- PROPERTY LINE
- SETBACK
- ABUTTER PROP. LINE
- EXT. PAVEMENT
- PRP. PAVEMENT
- PRP. CONCRETE
- EXT. CURB
- PRP. CONCRETE CURB
- EXT. BUILDING
- PRP. BUILDING
- PRP. PARKING
- EXT. CROSSWALK
- PRP. CROSSWALK
- EXT. STONEWALL
- PRP. OPEN SPACE
- EXT. STOCKADE FENCE
- EXT. LARGE TREE (CONIFEROUS)
- EXT. OVERHEAD ELEC — OHU
- EXT. POWER POLE
- EXT. GUY ANCHOR
- EXT. WATER LINE — W
- EXT. WATER HYDRANT
- EXT. STORM LINE — D
- PRP. STORM LINE — D
- EXT. CATCH BASIN
- PRP. CATCH BASIN
- DRAINAGE FLOW ARROW
- EXT. MAJOR CONTOUR — XXX
- EXT. MINOR CONTOUR — XXX
- PRP. MAJOR CONTOUR — XXX
- PRP. MINOR CONTOUR — XXX
- PRP. SPOT GRADE 102.0' X

GRAPHIC SCALE
0 10 20 30 40 (FEET)

GRID

TAX MAP 9, LOT 134

NO.	DESCRIPTION REVISIONS	DATE

STATE OF MAINE
KENNETH A. WOOD
No. 5992
LICENSED PROFESSIONAL ENGINEER

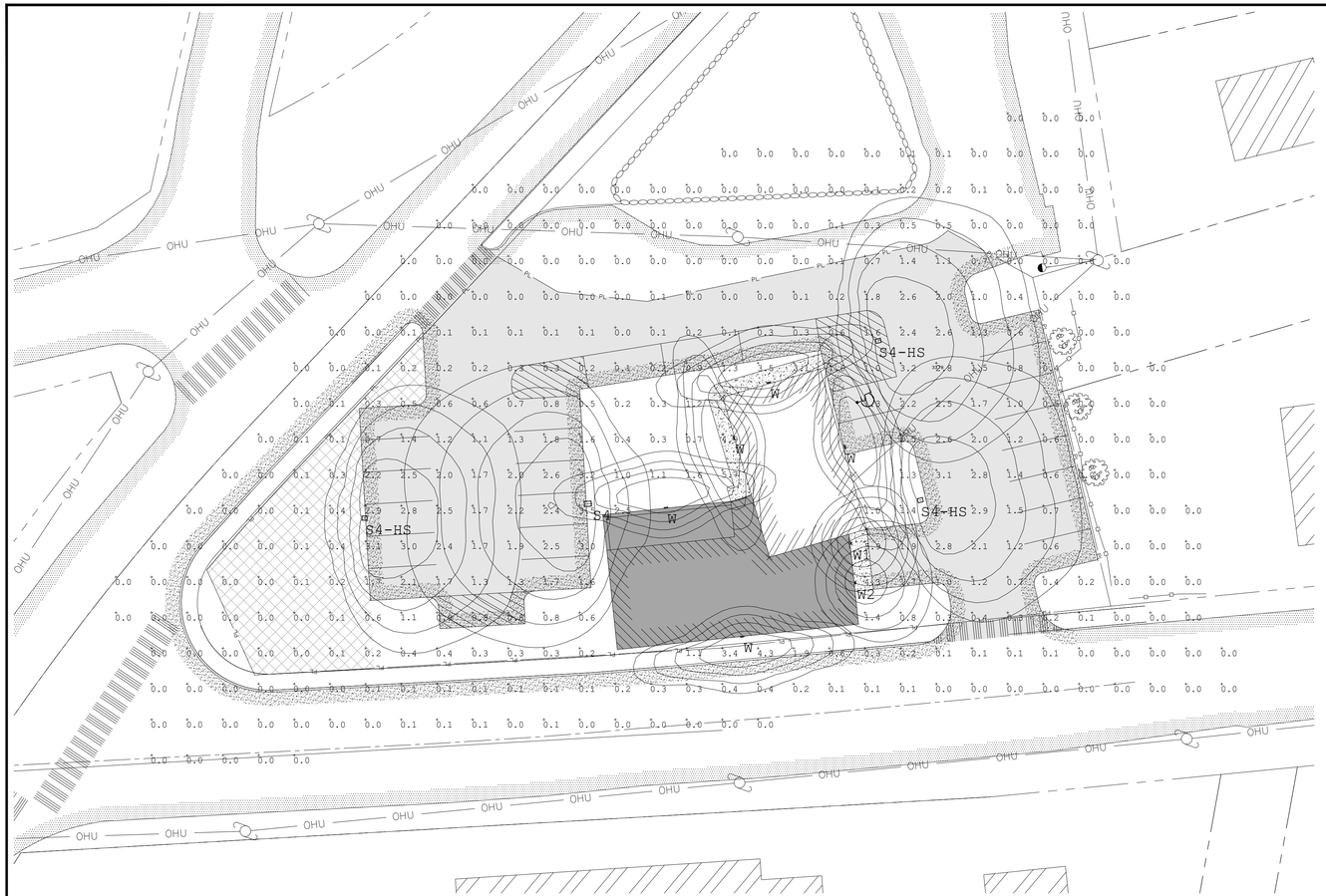
GRADING & UTILITIES PLAN
MAINE MEAT BUTCHER & RESTAURANT
5 WHIPPLE ROAD, KITTERY, MAINE

FOR:
JARROD SPANGLER
7 WALLINGFORD SQUARE, SUITE 104
KITTERY, ME 03904

ATTAR ENGINEERING, INC.
CIVIL ◆ STRUCTURAL ◆ MARINE ◆ SURVEYING
1284 STATE ROAD – ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

SCALE:	APPROVED BY:	DRAWN BY:
1" = 10'		MJS
DATE:		REVISION DATE:
01/30/24		– : –
JOB NO: 23088	FILE: 5 WHIPPLE BASE.DWG	SHEET: 3

MAP 9, LOT 134



Luminaire Schedule					
Symbol	Qty	Label	Arrangement	Description	[MANUFAC]
	1	S4	Single	MRS-LED-06L-SIL-4-UNV-DIM-30-70CRI-CXX-IMSBT1 / 4SQ B3 S11G15 S AB 4BC (15' AFG)	LSI INDUSTRIES, INC.
	3	S4-HS	Single	MRS-LED-06L-SIL-4-UNV-DIM-30-70CRI-IH-CXX-IMSBT1 / 4SQ B3 S11G15 S AB 4BC (15' AFG)	LSI INDUSTRIES, INC.
	5	W	Single	AWL XX 30K / WALL MTD 12' AFG	LSI INDUSTRIES, INC.
	2	W1	Single	WPSLS-01L-30-CXX / WALL MTD ABOVE MAN DOORS	LSI INDUSTRIES, INC.
	1	W2	Single	WPSLS-01L-30-CXX / WALL MTD 12' AFG	LSI INDUSTRIES, INC.

WESTERN PARKING LOT

Illuminance (Fc)
Average = 1.80
Maximum = 3.5
Minimum = 0.5
Avg/Min Ratio = 3.60
Max/Min Ratio = 7.00

EASTERN PARKING LOT

Illuminance (Fc)
Average = 1.58
Maximum = 3.2
Minimum = 0.4
Avg/Min Ratio = 3.95
Max/Min Ratio = 8.00

GRID

GRAPHIC SCALE
0 20 40 60 80 (FEET)

TAX MAP 9, LOT 134

NO.	DESCRIPTION	DATE
	REVISIONS	

KENNETH A. WOOD No. 5992 LICENSED PROFESSIONAL ENGINEER STATE OF MAINE

PHOTOMETRIC PLAN
MAINE MEAT BUTCHER & RESTAURANT
5 WHIPPLE ROAD, KITTERY, MAINE

FOR: JARROD SPANGLER
7 WALLINGFORD SQUARE, SUITE 104
KITTERY, ME 03904

ATTAR ENGINEERING, INC.
CIVIL ◆ STRUCTURAL ◆ MARINE ◆ SURVEYING
1284 STATE ROAD – ELIOT, MAINE 03903
PHONE: (207)439–6023 FAX: (207)439–2128

SCALE:	APPROVED BY:	DRAWN BY:
1" = 20'		MJS
DATE:		REVISION DATE:
12/28/23		– : –
JOB NO: 23088	FILE: 5 WHIPPLE BASE.DWG	SHEET: 4

MAP 9, LOT 134

Catalog # : _____ Project : _____
Prepared By : _____ Date : _____

AWL
All-Weather Wallpack - Low Profile

IP65

OVERVIEW	
Lumen Range	1500
CCT	4000K
Wattage	15
Efficacy (LPW)	100
Weight lbs (kg)	3.7 lbs (EP model 4.5 lbs.)

FEATURES & SPECIFICATIONS

Construction
- Die-cast aluminum housing
- Available in Bronze, White, Black, and Silver

Optical
- UV-resistant, high-impact polycarbonate lens
- Minimum CRI of 70

Electrical
- Standard Universal Voltage - 120/277VAC dual primary at 60Hz
- Emergency Package (EP) option draws and additional 17W and includes self-test/self-diagnostic and a heater for cold weather operation to -25°C (-13°F)
- Standard photocontrol sensor for use in dusk to dawn applications that can be disabled to be used as and always on or switchable fixture.
- Optional PIR motion sensor (PIR) with up to 10' of detection and operational dusk to dawn. The light will activate when motion is detected in AC mode only and turn off after two minutes of inactivity.

Battery
- Maintenance-free NiCad Battery
- Operating temperatures: -25°C to 50°C (-13°F to 122°F)

Installation
- Universal pattern backplate provides 3" or 4" J-box mounting pattern with keyhole slots
- Can be surface mounted using the ½" conduit entry point at top of housing

Warranty
- 5 year warranty on all electronics and housing

Listings
- UL 924
- cULus Listed for Wet Locations
- IP65 rated
- State of California Title 24
- NFPA 101
- NFPA 70
- NEC
- UL Listed 90 minute emergency run time; 24 hour recharge time

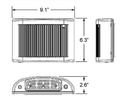
ORDERING GUIDE

TYPICAL ORDER EXAMPLE: **AWL BR EP**

Prefix	Housing Color	Controls
AWL - All-Weather Wallpack Low Profile	**BR** - Bronze **WH** - White **BK** - Black **SL** - Silver	**EP**[1] - Emergency Package **PIR**[2] - PIR motion sensor

1 - EP option includes self-test/self-diagnostic and a heater for cold weather operation to -25°C (-13°F)
2 - PIR option adds a PIR motion sensor and removes photocontrol

PRODUCT DIMENSIONS



Catalog # : _____ Project : _____
Prepared By : _____ Date : _____

Slim Wall Pack (WPSLS)
Small LED Slim Wall Pack

OVERVIEW	
Lumen Range	1,000 - 4,000
Wattage Range	12 - 40
Efficacy Range (LPW)	98 - 122
Weight lbs(kg)	3.8 (1.7)

QUICK LINKS
Ordering Guide | Performance | Dimensions | Photometrics

FEATURES & SPECIFICATIONS

Construction
- Rigid Precision Die cast-aluminum housing for durability and consistency.
- Vertical fins serve as a heat sink and resist accumulation of dust and debris.
- The Patent Pending thermal stacking heat removal technology extracts heat from within the housing moving it away from LEDs and integral components.
- Luminaire hinges open from the bottom to prevent leakage.
- Luminaire is proudly manufactured and tested in the U.S.
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory
- Shipping weight: 3.8 lbs in carton.

Optical System
- High-performance Chip On Board (COB) LEDs behind clear tempered glass for maximum light output.
- 3000K (4000K | 5000K color temperatures.
- Minimum CRI of 71.
- Zero uplight.

Electrical
- High-performance driver features over-voltage, under-voltage, short-circuit and over temperature protection.
- 0-10V dimming (10% - 100%) standard.
- Standard Universal Voltage (120-277 Vac) Input 50/60 Hz
- L70 Calculated Life: >100k Hours
- Total harmonic distortion: <20%
- Power factor: >.85
- Input power stays constant over life.
- Driver Off-State Power is 0 watts.
- Chip On Board (COB) LEDs with integrated circuit board mounted directly to the housing to maximize heat dissipation and promote long life.
- Components are fully encased in potting material for moisture resistance. Driver complies with FCC standards. Driver and key electronic components can easily be accessed.
- Minimum 2.5kV surge rating
- Operating temperature: -40°C to +50°C (-40°F to +122°F)

Controls
- Optional 120V electronic button Photocontol.
- Apertures for field or factory installed photocontrol.

Installation
- Surface mounts direct to J-box or wall.
- Features a bubble level and removable hinged face frame for ease of installation.

Warranty
- LSI LED Fixtures carry a 5-year warranty.
- 1 Year warranty on optional Button Photocell.

Listings
- Listed to UL 1598 and UL 8750.
- CSA Listed
- RoHS Compliant.
- DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.
- American Recovery and Reinvestment Act Funding Compliant.
- Suitable For Wet Locations.

Specifications and dimensions subject to change without notice.

Catalog # : _____ Project : _____
Prepared By : _____ Date : _____

Mirada Small Area (MRS)
Outdoor LED Area Light

IP66 IK08

OVERVIEW	
Lumen Package	6,000 - 30,000
Wattage Range	39 - 209
Efficacy Range (LPW)	112 - 163
Weight lbs(kg)	20 (9.1)
Control Options	IMSBT, ALB, ALS, 7-Pin, PCI

QUICK LINKS
Ordering Guide | Performance | Photometrics | Dimensions

FEATURES & SPECIFICATIONS

Construction
- Rugged die-cast aluminum housing contains factory prewired driver and optical unit. Cast aluminum wiring access door located underneath.
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
- Shipping weight: 27 lbs in carton.

Optical System
- State-of-the-Art one piece silicone optic sheet delivers industry leading optical control with an integrated gasket to provide IP66 rated seal.
- Proprietary silicone refractor optics provide exceptional coverage and uniformity in distribution types 2, 3, 4, SW, FT, and LC/RC.
- Silicone optical material does not yellow or crack with age and provides a typical light transmittance of 93-95%.
- Zero uplight.
- Available in 5000K, 4000K, and 3000K color temperatures per ANSI C78.377
- Minimum CRI of 70.
- Integral louver (IL) and integral half louver (IH) options available for enhanced backlight control.

Electrical
- High-performance driver features over-voltage, under-voltage, short-circuit and over temperature protection.
- 0-10V dimming (10% - 100%) standard.
- Standard Universal Voltage (120-277 VAC) Input 50/60 Hz or optional High Voltage (347-480 VAC).
- L70 Calculated Life: >60k Hours
- Total harmonic distortion: <20%
- Operating temperature: -40°C to +50°C (-40°F to +122°F). 30L lumen packages rated to +40°C.
- Power factor: >.90
- Input power stays constant over life.
- Field replaceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
- High-efficacy LEDs mounted to metal-core circuit board to maximize heat dissipation
- Driver is fully encased in potting material for moisture resistance and complies with FCC standards. Driver and key electronic components can easily be accessed.

Controls
- Optional integral passive infrared Bluetooth® motion and photocell sensor. Fixtures operate independently and can be commissioned via iOS or Android configuration app.
- LSI's AirLink™ wireless control system options reduce energy and maintenance costs while optimizing light quality 24/7.

Installation
- Designed to mount to square or round poles.
- A single fastener secures the hinged door, underneath the housing and provides quick & easy access to the electrical compartment.
- Included terminal block accepts up to 12 ga. wire.
- Utilizes LSI's traditional B3 drill pattern.

Warranty
- LSI luminaires carry a 5-year limited warranty. Refer to https://www.lsicorp.com/resources/terms-conditions-warranty/ for more information.

Listings
- Listed to UL 1598 and UL 8750.
- Meets Buy American Act requirements.
- IDA compliant; with 3000K color temperature selection.
- Title 24 Compliant; see local ordinance for qualification information.
- Suitable for wet locations.
- IP66 rated Luminaire per IEC 60598-1.
- 3G rated for ANSI C136.31 high vibration applications are qualified.
- IK08 rated luminaire per IEC 66262 mechanical impact code
- DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

Catalog # : _____ Project : _____
Prepared By : _____ Date : _____

Steel Poles
Square Straight

QUICK LINKS
Ordering Guide | Configurations | Dimensions | EPA

FEATURES & SPECIFICATIONS

Pole Shaft
- Straight poles are 4", 5", or 6" square.
- Pole shaft is electro-welded ASTM-A500 Grade C steel tubing with a minimum yield strength of 50,000 psi.
- On Tenon Mount steel poles, tenon is 2-3/8" O.D. high-strength pipe. Tenon is 4-3/4" in length.

Hand-Hole
- Standard hand-hole location is 12" above pole base.
- Poles 22' and above have a 3" x 6" reinforced hand-hole. Shorter poles have a 2" x 4" non-reinforced hand-hole.

Base
- Pole base is ASTM-A36 hot-rolled steel plate with a minimum yield strength of 36,000 psi.
- Two-piece square base cover is optional.

Anchor Bolts
- Poles are furnished with anchor bolts featuring zinc-plated double nuts and washers. Galvanized anchor bolts are optional.
- Anchor Bolts conform to ASTM F 1554-07a Grade 55 with a minimum yield strength of 55,000 PSI.

Ground Lug
- Ground lug is standard.

Duplex Receptacle
- Weatherproof duplex receptacle is optional.

Ground Fault Circuit Interrupter
- Self-testing Ground fault circuit interrupter is optional.

Finishes
- Every pole is provided with the DuraGrip Protection System and a 5-year limited warranty:
- When the top-of-the line DuraGrip Plus Protection System is selected, in addition to the DuraGrip Protection System, a non-porous, automotive-grade corrosion coating is applied to the lower portion of the pole interior sealing and further protecting it from corrosion. This option extends the limited warranty to 7 years.

Determining The Luminaire/Pole Combination For Your Application:
- Select luminaire from luminaire ordering information.
- Select bracket configuration if required
- Determine EPA value from luminaire/bracket EPA chart
- Select Pole Height
- Select MPH to match wind speed in the application area (See windspeed maps).
- Confirm pole EPA equal to or exceeding value of luminaire/bracket EPA
- Consult factory for special wind load requirements and banner brackets.

Pole Vibration Damper
- A pole vibration damper is recommended in open terrain areas of the country where low steady state winds are common.
- Non-tapered poles and lightly loaded poles are more susceptible to destructive vibration if a damper is not installed.

Listings
- UL Listed
- BAA/TAA Compliant

EROSION & SEDIMENTATION CONTROL NOTES

1. PRIOR TO ANY SNOW EVENT, SILTATION FENCE OR HAY BALE BARRIERS WILL BE INSTALLED DOWNSLOPE OF ALL STRIPPING OR CONSTRUCTION OPERATIONS. A DOUBLE SILT FENCE BARRIER SHALL BE INSTALLED DOWNSLOPE OF ANY SOIL MATERIAL STOCKPILES. SILT FENCES SHALL BE INSPECTED AFTER EACH RAIN EVENT AND DAILY DURING PROLONGED RAIN. SILT AND SOIL PARTICLES ACCUMULATING BEHIND THE FENCE SHALL BE REMOVED AFTER EACH SIGNIFICANT RAIN EVENT AND IN NO INSTANCE SHOULD ACCUMULATION EXCEED 1/2 THE HEIGHT OF THE FENCE. TORN OR DAMAGED AREAS SHALL BE REPAIRED.

2. TEMPORARY AND PERMANENT VEGETATION AND MULCHING IS AN INTEGRAL COMPONENT OF THE EROSION AND SEDIMENTATION CONTROL PLAN. ALL AREAS SHALL BE INSPECTED AND MAINTAINED UNTIL THE DESIRED VEGETATIVE COVER IS ESTABLISHED. THESE CONTROL MEASURES ARE ESSENTIAL TO EROSION PREVENTION AND ALSO REDUCE COSTLY REWORK OF GRADED AND SHAPED AREAS.

3. SEEDING, FERTILIZER AND LIME RATES AND TIME OF APPLICATION WILL BE DEPENDENT ON SOIL REQUIREMENTS. TEMPORARY VEGETATION SHALL BE MAINTAINED IN THESE AREAS UNTIL PERMANENT SEEDING IS APPLIED. ADDITIONALLY, EROSION AND SEDIMENTATION MEASURES SHALL BE MAINTAINED UNTIL PERMANENT VEGETATION IS ESTABLISHED.

4. ALL LAWN AREA, OUTER POND SIDE SLOPES AND SWALES SHALL BE PERMANENTLY SEEDED WITH THE FOLLOWING MIXTURE: 20 LB/ACRE CREEPING RED FESCUE, 2 LB/ACRE REDTOP AND 20 LB/ACRE TALL FESCUE FOR A TOTAL OF 42 LB/ACRE. FERTILIZER AND LIME RATES SHALL BE DEPENDENT ON SOIL TESTING. IN THE ABSENCE OF SOIL TESTS, FERTILIZE WITH 10-20-20 (N-P205-K201) AT 800 LB/ACRE AND LIME AT 3 TONS/ACRE. MULCH WITH HAY AT 70-90 LB/1000 S.F. 4" OF LOAM SHALL BE APPLIED PRIOR TO SEEDING.

5. POND BOTTOMS AND INNER POND SIDESLOPES SHALL BE PERMANENTLY SEEDED WITH THE FOLLOWING MIXTURE: 20 LB/ACRE CREEPING RED FESCUE, 8 LB/ACRE BIRDSFOOT TREFOIL AND 20 LB/ACRE TALL FESCUE FOR A TOTAL OF 48 LB/ACRE. SEE THE ABOVE NOTE FOR FERTILIZER, LIME AND MULCHING RATES.

6. TEMPORARY VEGETATION OF ALL DISTURBED AREAS, MATERIAL STOCKPILES AND OTHER SUCH AREAS SHALL BE ESTABLISHED BY SEEDING WITH EITHER WINTER RYE AT A RATE OF 112 LB/ACRE OR ANNUAL RYEGRASS AT A RATE OF 40 LB/ACRE. WINTER RYE SHALL BE USED FOR FALL SEEDING AND ANNUAL RYEGRASS FOR SHORT DURATION SEEDING. SEEDING SHALL BE ACCOMPLISHED BEFORE OCTOBER 1. TEMPORARY STABILIZATION WITH MULCH OF DISTURBED AREAS SHALL TAKE PLACE WITHIN 7 DAYS OF THE CESSATION OF CONSTRUCTION ACTIVITIES IN AN AREA THAT WILL NOT BE WORKED FOR MORE THAN 7 DAYS. AREAS WITHIN 75 FEET OF A WETLAND OR WATERBODY SHALL BE TEMPORARILY STABILIZED WITH MULCH WITHIN 48 HOURS OF THE INITIAL DISTURBANCE OR PRIOR TO ANY STORM EVENT, WHICHEVER COMES FIRST.

7. TEMPORARY SEEDING OF DISTURBED AREAS SHALL BE ACCOMPLISHED BEFORE OCTOBER 1. PERMANENT SEEDING SHALL BE ACCOMPLISHED BEFORE SEPTEMBER 15.

8. ALL SEEDED AREAS SHALL BE MULCHED WITH HAY AT A RATE OF 2 BALES (70-90 LB) PER 1000 S.F. OF SEEDED AREA.

9. ALL DISTURBED AREAS ON THE SITE SHALL BE PERMANENTLY STABILIZED WITHIN 7 DAYS OF FINAL GRADING OR TEMPORARILY STABILIZED PER E&S NOTE 6. PERMANENT STABILIZATION MEANS 90% COVER WITH MATURE, HEALTHY PLANTS FOR PLANTED AREAS AND FOR SODDED AREAS, COMPLETE BINDING OF SOD ROOTS INTO THE UNDERLYING SOIL WITH NO SLUMPING OF THE SOD OR DIE-OFF.

10. A STABILIZED CONSTRUCTION ENTRANCE SHALL BE INSTALLED AT ALL ACCESSES TO PUBLIC ROADS (SEE PLAN). TEMPORARY CULVERTS SHALL BE PROVIDED AS REQUIRED.

11. SLOPES BETWEEN 2:1 AND 3:1 (INCLUDING 3:1) SHALL BE TREATED WITH POLYJUTE OPEN WEAVE GEOTEXTILE (OR EQUIVALENT) AFTER SEEDING. JUTE MATS SHALL BE ANCHORED PER MANUFACTURER'S SPECIFICATIONS. SLOPES BETWEEN 2:1 AND 1.5:1 (INCLUDING 2:1) SHALL BE ANCHORED WITH RIPRAP. SLOPES ARE PROHIBITED FROM BEING STEEPER THAN 1.5:1.

12. EXCESSIVE DUST CAUSED BY CONSTRUCTION OPERATIONS SHALL BE CONTROLLED BY APPLICATION OF WATER OR CALCIUM CHLORIDE.

13. THE CONTRACTOR MAY OPT TO USE EROSION CONTROL MIX BERM AS A SEDIMENT BARRIER IN LIEU OF SILTATION FENCE OR HAY BALE BARRIERS WITH APPROVAL FROM THE INSPECTING ENGINEER.

14. SEDIMENT BARRIERS SHALL BE DOUBLED WITH 75' OF WETLANDS OR OTHER PROTECTED NATURAL RESOURCES.

15. TEMPORARY E&S CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS OF PERMANENT STABILIZATION. ACCUMULATED SEDIMENTS SHALL BE REMOVED AND THE AREA STABILIZED.

16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE HOUSEKEEPING PRACTICES DURING THE CONSTRUCTION OF THE PROJECT. THESE STANDARDS CAN BE FOUND IN THE FOLLOWING DOCUMENT: MDEP CHAPTER 500 (STORMWATER MANAGEMENT), APPENDIX C. HOUSEKEEPING. HOUSEKEEPING PRACTICES INCLUDE, BUT ARE NOT LIMITED TO, SPILL PREVENTION, GROUNDWATER PROTECTION, FUGITIVE SEDIMENT AND DUST, DEBRIS AND OTHER MATERIALS, EXCAVATION DEWATERING, AUTHORIZED NON-STORMWATER DISCHARGES AND UNAUTHORIZED NON-STORMWATER DISCHARGES. ANY SPILL OR RELEASE OF HAZARDOUS SUBSTANCES MUST BE REPORTED TO THE MDEP; FOR OIL SPILLS, CALL 1-800-482-0777; FOR SPILLS OF TOXIC OR HAZARDOUS MATERIAL, CALL 1-800-452-4664.

17. WHENEVER PRACTICABLE, NO DISTURBANCE ACTIVITIES SHOULD TAKE PLACE WITHIN 50 FEET OF ANY PROTECTED NATURAL RESOURCE. IF DISTURBANCE ACTIVITIES TAKE PLACE BETWEEN 30 FEET AND 50 FEET OF ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED. IF DISTURBANCE ACTIVITIES TAKE PLACE LESS THAN 30 FEET FROM ANY PROTECTED NATURAL RESOURCE, AND STORMWATER DISCHARGES THROUGH THE DISTURBED AREAS TOWARD THE PROTECTED NATURAL RESOURCE, PERIMETER EROSION CONTROLS MUST BE DOUBLED AND DISTURBED AREAS MUST BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 7 DAYS.

18. ALL SEDIMENT BARRIERS AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION.

19. SEDIMENT BARRIERS SHALL BE INSTALLED DOWN-GRADIENT OF STOCKPILES, AND STORMWATER SHALL BE PREVENTED FROM RUNNING ONTO STOCKPILES.

20. THE PROPOSED STORMWATER MANAGEMENT AREAS INTENDED FOR USE AS PERMANENT, POST-CONSTRUCTION BMP'S SHALL BE USED TO TEMPORARILY MANAGE FLOWS DURING CONSTRUCTION. THESE BMP'S SHALL BE MAINTAINED DURING THEIR TEMPORARY USE BY INSTALLING THE APPROPRIATE MEASURES DURING CONSTRUCTION, INCLUDING UNDERDRAINS, SOIL FILTER MEDIA, ETC. SEDIMENT REMOVAL AND SLOPE STABILIZATION SHALL TAKE PLACE AS NECESSARY FOR TEMPORARY CONSTRUCTION MANAGEMENT.

21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATE HOUSEKEEPING PRACTICES DURING THE CONSTRUCTION OF THE PROJECT. THESE STANDARDS CAN BE FOUND IN THE FOLLOWING DOCUMENT: MDEP CHAPTER 500 (STORMWATER MANAGEMENT), APPENDIX C. HOUSEKEEPING. HOUSEKEEPING PRACTICES INCLUDE, BUT ARE NOT LIMITED TO, SPILL PREVENTION, GROUNDWATER PROTECTION, FUGITIVE SEDIMENT AND DUST, DEBRIS AND OTHER MATERIALS, EXCAVATION DEWATERING, AUTHORIZED NON-STORMWATER DISCHARGES AND UNAUTHORIZED NON-STORMWATER DISCHARGES(DETAILED BELOW).

E&S INSPECTION/MAINTENANCE DURING CONSTRUCTION

A. INSPECTION AND CORRECTIVE ACTION. INSPECT DISTURBED AND IMPERVIOUS AREAS, EROSION CONTROL MEASURES, MATERIALS STORAGE AREAS THAT ARE EXPOSED TO PRECIPITATION, AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE. INSPECT THESE AREAS AT LEAST ONCE A WEEK, PRIOR TO COMPLETING PERMANENT STABILIZATION MEASURES, AS WELL AS BEFORE AND WITHIN 24 HOURS AFTER A STORM EVENT WHICH PRODUCES 0.5 INCHES OR MORE WITHIN SAID 24 HOUR PERIOD. A TOWN-APPOINTED ENGINEER WITH KNOWLEDGE OF EROSION AND STORMWATER CONTROL, INCLUDING THE STANDARDS AND CONDITIONS IN THE PERMIT, SHALL CONDUCT THE INSPECTIONS AND SHALL ALSO ENSURE THAT THE RECOMMENDED MAINTENANCE IS PERFORMED.

B. MAINTENANCE. IF BEST MANAGEMENT PRACTICES (BMPS) NEED TO BE REPAIRED, THE REPAIR WORK SHOULD BE INITIATED UPON DISCOVERY OF THE PROBLEM BUT NO LATER THAN THE END OF THE NEXT WORKDAY. IF ADDITIONAL BMPS OR SIGNIFICANT REPAIR OF BMPS ARE NECESSARY, IMPLEMENTATION MUST BE COMPLETED WITHIN 7 CALENDAR DAYS AND PRIOR TO ANY STORM EVENT WHICH PRODUCES 0.5 INCHES OR MORE WITHIN A 24 HOUR PERIOD. ALL MEASURES MUST BE MAINTAINED IN EFFECTIVE OPERATING CONDITION UNTIL AREAS ARE PERMANENTLY STABILIZED.

C. DOCUMENTATION. KEEP A LOG (REPORT) SUMMARIZING THE INSPECTIONS AND ANY CORRECTIVE ACTION TAKEN. THE LOG MUST INCLUDE THE NAME(S) AND QUALIFICATIONS OF THE PERSON MAKING THE INSPECTIONS, THE DATE(S) OF THE INSPECTIONS, AND MAJOR OBSERVATIONS ABOUT THE OPERATION AND MAINTENANCE OF EROSION AND SEDIMENTATION CONTROLS, MATERIALS STORAGE AREAS, AND VEHICLES ACCESS POINTS TO THE PARCEL. MAJOR OBSERVATIONS MUST INCLUDE BMPS THAT NEED MAINTENANCE, BMPS THAT FAILED TO OPERATE AS DESIGNED OR PROVED INADEQUATE FOR A PARTICULAR LOCATION, AND LOCATION(S) WHERE ADDITIONAL BMPS ARE NEEDED. FOR EACH BMP REQUIRING MAINTENANCE, BMP NEEDING REPLACEMENT, AND LOCATION NEEDING ADDITIONAL BMPS, NOTE IN THE LOG THE CORRECTIVE ACTION TAKEN AND WHEN IT WAS TAKEN. THE LOG MUST BE MADE ACCESSIBLE TO DEPARTMENT STAFF AND A COPY MUST BE PROVIDED UPON REQUEST. THE PERMITTEE SHALL RETAIN A COPY OF THE LOG FOR A PERIOD OF AT LEAST THREE YEARS FROM THE COMPLETION OF PERMANENT STABILIZATION.

CONSTRUCTION HOUSEKEEPING PUNCHLIST

1. ALL DISTRUBED AREAS SHALL BE PERMANENTLY STABILIZED, AND PLANTINGS SHALL BE ESTABLISHED (GRASS SEEDS HAVE GERMINATED WITHIN 90% VEGETATIVE COVER).

2. ALL TRASH, SEDIMENTS, DEBRIS, OR ANY SOLID WASTE SHALL BE REMOVED FROM STORMWATER CHANNELS, CATCH BASINS, DETENTION STRUCTURES, DISCHARGE POINTS, AND LEVEL SPREADERS.

3. ALL EROSION AND SEDIMENTATION DEVICES SHALL BE REMOVED (SILTATION FENCES AND POSTS, DIVERSIONS AND SEDIMENT STRUCTURES, ETC.)

4. ALL DELIVERABLES (CERTIFICATIONS, SURVEY INFORMATION, AS-BUILT PLANS, REPORTS, NOTICES OF TERMINATION, ETC.) IN ACCORDANCE WITH ALL PERMIT REQUIREMENTS SHALL BE SUBMITTED TO THE TOWN, THE MAINE DEP, HOMEOWNER'S ASSOCIATION, OWNER, AND/OR ALL APPROPRIATE ENTITIES.

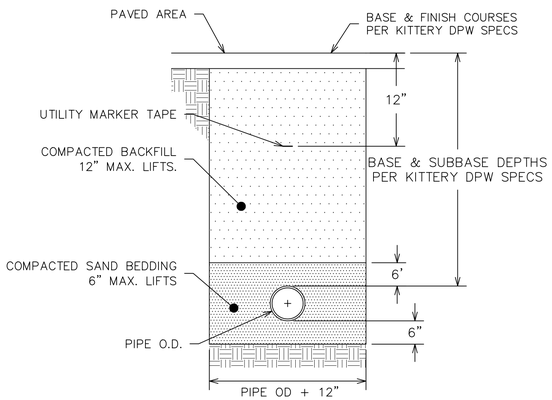
STORMWATER DISCHARGE REQUIREMENTS

AUTHORIZED NON-STORMWATER DISCHARGES. IDENTIFY AND PREVENT CONTAMINATION BY NON-STORMWATER DISCHARGES. WHERE ALLOWED NON-STORMWATER DISCHARGES EXIST, THEY MUST BE IDENTIFIED AND STEPS SHOULD BE TAKEN TO ENSURE THE IMPLEMENTATION OF APPROPRIATE POLLUTION PREVENTION MEASURES FOR THE NON-STORMWATER COMPONENT(S) OF THE DISCHARGE. AUTHORIZED NON-STORMWATER DISCHARGES ARE:

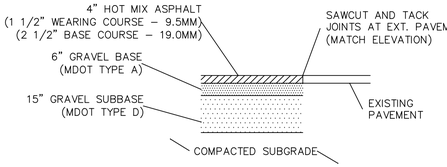
(A) DISCHARGES FROM FIREFIGHTING ACTIVITY;
(B) FIRE HYDRANT FLUSHINGS;
(C) VEHICLE WASHWATER IF DETERGENTS ARE NOT USED AND WASHING IS LIMITED TO THE EXTERIOR OF VEHICLES (ENGINE, UNDERCARRIAGE AND TRANSMISSION WASHING IS PROHIBITED);
(D) DUST CONTROL RUNOFF IN ACCORDANCE WITH PERMIT CONDITIONS AND APPENDIX (C)(3);
(E) ROUTINE EXTERNAL BUILDING WASHDOWN, NOT INCLUDING SURFACE PAINT REMOVAL, THAT DOES NOT INVOLVE DETERGENTS;
(F) PAVEMENT WASHWATER (WHERE SPILLS/LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE NOT OCCURRED, UNLESS ALL SPILLED MATERIAL HAD BEEN REMOVED) IF DETERGENTS ARE NOT USED;
(G) UNCONTAMINATED AIR CONDITIONING OR COMPRESSOR CONDENSATE;
(H) UNCONTAMINATED GROUNDWATER OR SPRING WATER;
(I) FOUNDATION OR FOOTER DRAIN-WATER WHERE FLOWS ARE NOT CONTAMINATED;
(J) UNCONTAMINATED EXCAVATION DEWATERING (SEE REQUIREMENTS IN APPENDIX C(5))
(K) PORTABLE WATER SOURCES INCLUDING WATERLINE FLUSHINGS
(L) LANDSCAPE IRRIGATION

UNAUTHORIZED NON-STORMWATER DISCHARGES. THE DEPARTMENT'S APPROVAL UNDER THIS CHAPTER DOES NOT AUTHORIZE A DISCHARGE THAT IS MIXED WITH A SOURCE OF NON-STORMWATER, OTHER THAN THOSE DISCHARGES IN COMPLIANCE WITH APPENDIX C (6). SPECIFICALLY, THE DEPARTMENT'S APPROVAL DOES NOT AUTHORIZE DISCHARGES OF THE FOLLOWING:

(A) WASTEWATER FROM THE WASHOUT OR CLEANOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS OR OTHER CONSTRUCTION MATERIALS;
(B) FUELS, OILS OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE;
(C) SOAPS, SOLVENTS, OR DETERGENTS USED IN VEHICLE AND EQUIPMENT WASHING; AND
(D) TOXIC OR HAZARDOUS SUBSTANCES FROM A SPILL OR OTHER RELEASE

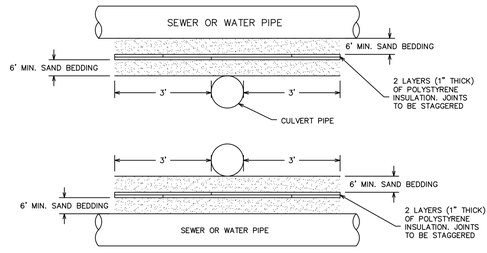


UTILITY TRENCH PATCH DETAIL
(NTS)

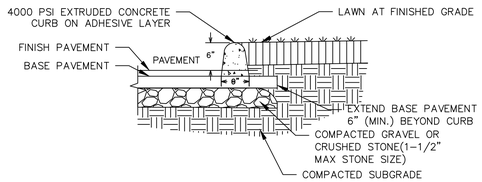


ASPHALT PARKING CROSS SECTION
(NTS)

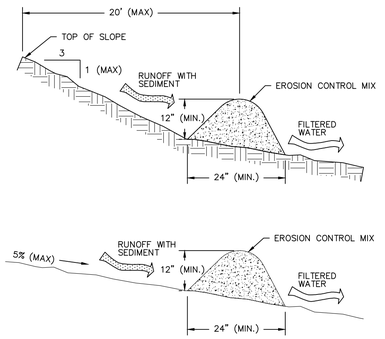
GRAVEL FILL TO BE COMPACTED TO 95% MODIFIED PROCTOR



CULVERT CROSSING
(NTS)



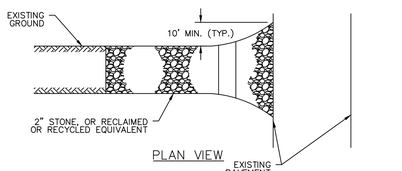
EXTRUDED CONCRETE CURB DETAIL
(NTS)



EROSION CONTROL MIX COMPOSITION STANDARDS:

- THE ORGANIC MATTER CONTENT SHALL BE BETWEEN 80 AND 100%, DRY WEIGHT BASIS.
- PARTICLE SIZE BY WEIGHT SHALL BE 100% PASSING A 6" SCREEN AND A MINIMUM OF 70% MAXIMUM OF 85% PASSING A 0.75" SCREEN.
- THE ORGANIC PORTION NEEDS TO BE FIBROUS AND ELONGATED.
- LARGE PORTIONS OF SILTS, CLAYS, OR FINE SANDS ARE NOT ACCEPTABLE IN THE MIX.
- SOLUBLE SALTS CONTENT SHALL BE < 4.0 mmhos/cm
- THE pH SHOULD FALL BETWEEN 5.0 AND 8.0.

EROSION CONTROL MIX BERM - NTS

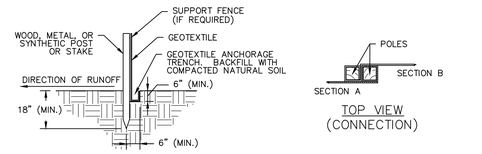


PROFILE

NOTES:

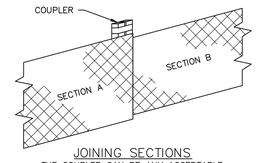
1. GEOTEXTILE: PLACE FILTER CLOTH OVER ENTIRE AREA TO BE COVERED WITH AGGREGATE. FILTER CLOTH WILL NOT BE REQUIRED ON A SINGLE FAMILY RESIDENTIAL LOT.
2. PIPING OF SURFACE WATER UNDER ENTRANCE SHALL BE PROVIDED AS REQUIRED. IF PIPING IS IMOSSIBLE, A MOUNTABLE BERM WITH A 5:1 SLOPE WILL BE PERMITTED.

STABILIZED CONSTRUCTION ENTRANCE



TOP VIEW
(CONNECTION)

TOE-IN METHOD

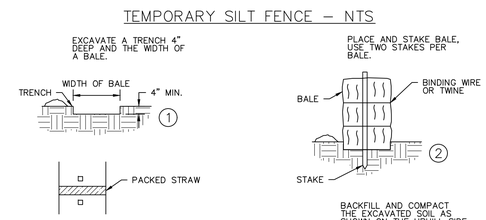


NOTES:

1. DEPENDING UPON THE CONFIGURATION, ATTACH GEOTEXTILE TO WIRE MESH WITH HOG RINGS, TO STEEL POSTS WITH TIE WIRES, AND TO WOOD POSTS WITH STAPLES.
2. POSTS MAY BE WIRED TOGETHER WHEN JOINING SECTIONS.

JOINING SECTIONS
THE COUPLER CAN BE ANY ACCEPTABLE DEVICE USED TO TIE THE POLES TOGETHER

TEMPORARY SILT FENCE - NTS



NOTES:

1. PLACE BALES IN A SINGLE ROW, LENGTHWISE ON THE CONTOUR.
2. PLACE BALES 10' AWAY FROM THE TOE OF SLOPE.
3. IN SLOPING AREAS WHERE SURFACE FLOW FOLLOWS THE BALE LINE, INSTALL PERPENDICULAR BALE CHECKS AT APPROPRIATE INTERVALS (100' MAX.)

HAY BALE BARRIER - NTS

GRAPHIC SCALE
0 30 60 90 120 (FEET)

NO.	DESCRIPTION	DATE
	REVISIONS	

STATE OF MAINE
KENNETH A. WOOD
No. 5992
LICENSED PROFESSIONAL ENGINEER

TAX MAP 9, LOT 134

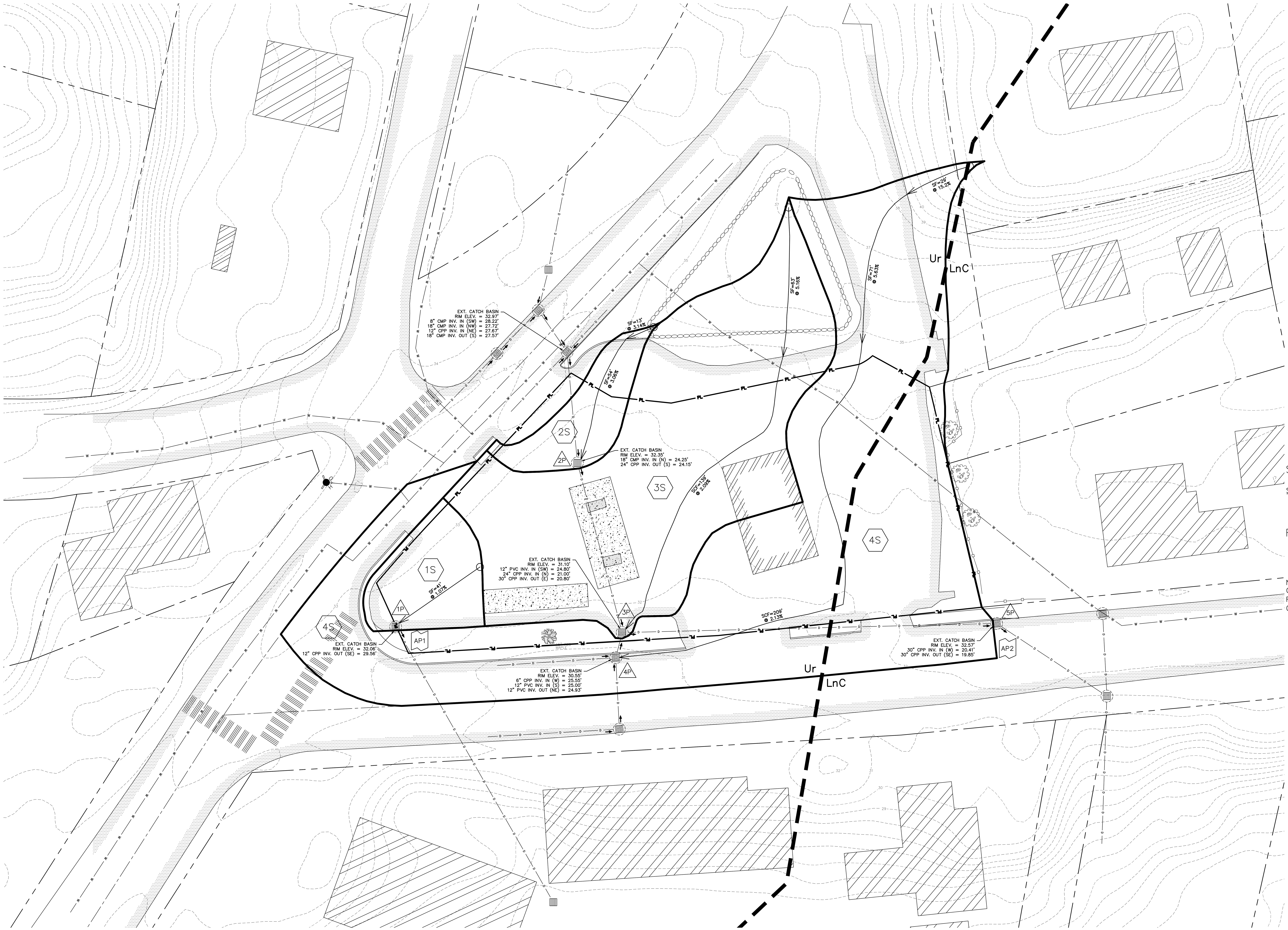
SITE DETAILS
MAINE MEAT BUTCHER & RESTAURANT
5 WHIPPLE ROAD, KITTERY, MAINE

FOR: JARROD SPANGLER
7 WALLINGFORD SQUARE, SUITE 104
KITTERY, ME 03904

ATTAR ENGINEERING, INC.
CIVIL ◆ STRUCTURAL ◆ MARINE ◆ SURVEYING
1284 STATE ROAD - ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

SCALE:	APPROVED BY:	DRAWN BY:
AS NOTED		MJS
DATE:		REVISION DATE:
01/30/24		- : -
JOB NO: 23088	FILE: 5 WHIPPLE BASE.DWG	SHEET: 5

MAP 9, LOT 134



SOILS LEGEND

SYMBOL	SOIL SERIES NAME	HSG	SLOPES
LnC	LYMAN LOAM, ROCKY	D	8–15%
Ur	URBAN LAND	–	N/A

FLOW TYPES

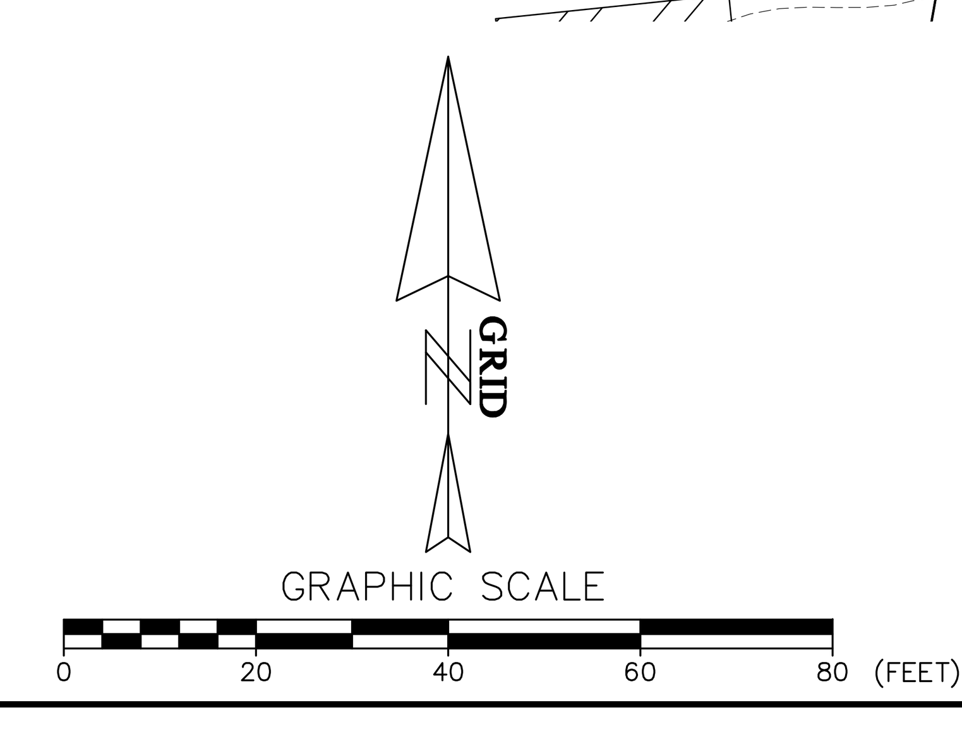
SF SHEET FLOW
SCF SHALLOW CONCENTRATED FLOW
CF CHANNEL FLOW

NOTE: SOILS INFORMATION IS TAKEN FROM CUSTOM SOIL RESOURCE REPORT FOR YORK COUNTY, MAINE, MEDIUM INTENSITY, INFORMATION GATHERED FROM THE NATIONAL RESOURCES CONSERVATION SERVICE (NRCS). SURVEY AREA DATA IS VERSION 22, DATED 09/05/2023.

1S SUBCATCHMENT
1R REACH
1P POND
AP1 ANALYSIS POINT

LEGEND

PROPERTY LINE	
EXT. ABUTTER LINE	
EXT. GRAVEL	
EXT. PAVEMENT	
EXT. BUILDING	
EXT. MAJOR CONTOUR	XXX
EXT. MINOR CONTOUR	XXX
EXT. STORM LINE	D
EXT. CATCH BASIN	
EXT. SUBCATCHMENT	
EXT. Tc FLOW LINE	
EXT. Tc GRADE CALC	SF=XXX' @ X.XX%
SOIL TYPE BOUNDARY	



TAX MAP 9, LOT 134

STORMWATER: EXISTING CONDITIONS
MAINE MEAT BUTCHER & RESTAURANT
5 WHIPPLE ROAD, KITTERY, MAINE

NO.	DESCRIPTION	DATE
REVISIONS		

STATE OF MAINE
KENNETH A. WOOD
No. 5992
LICENSED
PROFESSIONAL ENGINEER

FOR: JARROD SPANGLER
7 WALLINGFORD SQUARE, SUITE 104
KITTERY, ME 03904

ATTAR ENGINEERING, INC.
CIVIL ◆ STRUCTURAL ◆ MARINE ◆ SURVEYING
1284 STATE ROAD – ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

SCALE: 1" = 20'	APPROVED BY:	DRAWN BY: MJS
DATE: 01/30/24		REVISION DATE: – : –
JOB NO: 23088	FILE: 5 WHIPPLE BASE.DWG	SHEET: 7

MAP 9, LOT 134

Maine Meat Butcher & Restaurant - Existing Condition Peak Flows

Analysis Point	2 Year Storm (cfs)	10 Year Storm (cfs)	25 Year Storm (cfs)	
AP1	0.14	0.21	0.27	
AP2	2.53	4.00	5.16	

Maine Meat Butcher & Restaurant - Developed Condition Peak Flows

Analysis Point	2 Year Storm (cfs)	10 Year Storm (cfs)	25 Year Storm (cfs)	
AP1	0.08	0.16	0.22	
AP2	2.27	3.66	4.77	

Maine Meat Butcher & Restaurant - Change in Peak Flows

Analysis Point	2 Year Storm (cfs)	10 Year Storm (cfs)	25 Year Storm (cfs)	
AP1	-0.06	-0.05	-0.05	
AP2	-0.26	-0.34	-0.39	

Rainfall Event Totals (in.)	
2-Year	3.24
10-Year	4.94
25-Year	6.28

SOILS LEGEND

SYMBOL	SOIL SERIES NAME	HSG	SLOPES
LnC	LYMAN LOAM, ROCKY	D	8–15%
Ur	URBAN LAND	–	N/A

FLOW TYPES

SF SHEET FLOW
SCF SHALLOW CONCENTRATED FLOW
CF CHANNEL FLOW

NOTE: SOILS INFORMATION IS TAKEN FROM CUSTOM SOIL RESOURCE REPORT FOR YORK COUNTY, MAINE, MEDIUM INTENSITY, INFORMATION GATHERED FROM THE NATIONAL RESOURCES CONSERVATION SERVICE (NRCS). SURVEY AREA DATA IS VERSION 22, DATED 09/05/2023.

1S SUBCATCHMENT
1R REACH
1P POND (LEVEL SPREADER)
AP1 ANALYSIS POINT

LEGEND

PROPERTY LINE
EXT. ABUTTER LINE
EXT. GRAVEL
EXT. PAVEMENT
PRP. PAVEMENT
EXT. BUILDING
PRP. BUILDING
EXT. STORM LINE
PRP. STORM LINE
EXT. CATCH BASIN
PRP. CATCH BASIN
EXT. MAJOR CONTOUR
EXT. MINOR CONTOUR
PRP. MAJOR CONTOUR
PRP. MINOR CONTOUR
PRP. SPOT GRADE
PRP. SUBCATCHMENT
PRP. Tc FLOW LINE
PRP. Tc GRADE CALC
SOIL TYPE BOUNDARY
PRP. SILTATION FENCE

GRID

GRAPHIC SCALE
0 20 40 60 80 (FEET)

TAX MAP 9, LOT 134

NO.	DESCRIPTION	DATE
	REVISIONS	

KENNETH A. WOOD No. 5992 — STATE OF MAINE — LICENSED PROFESSIONAL ENGINEER

STORMWATER: DEVELOPED CONDITIONS
MAINE MEAT BUTCHER & RESTAURANT
5 WHIPPLE ROAD, KITTERY, MAINE

FOR: JARROD SPANGLER
7 WALLINGFORD SQUARE, SUITE 104
KITTERY, ME 03904

ATTAR ENGINEERING, INC.
CIVIL ◆ STRUCTURAL ◆ MARINE ◆ SURVEYING
1284 STATE ROAD – ELIOT, MAINE 03903
PHONE: (207)439–6023 FAX: (207)439–2128

SCALE:	APPROVED BY:	DRAWN BY:
1" = 20'		MJS
DATE:		REVISION DATE:
01/30/24		– : –
JOB NO: 23088	FILE: 5 WHIPPLE BASE.DWG	SHEET: 8

MAP 9, LOT 134

ROGERS ROAD

WHIPPLE ROAD

EXISTING
1,328 SQ. FT.
SINGLE-STORY
BUILDING
SLAB ELEV. = 33.0'

PROPOSED 2,076 SQ. FT.
SINGLE-STORY ADDITION
SLAB ELEV. = 33.0'

PORCH CANOPY

APPROX. LOCATION OF EXT. 10" WATER MAIN (DIGITIZED FROM TOWN GIS SERVICE)

EXT. CATCH BASIN
RIM ELEV. = 32.95'
8" CPP INV. IN (SW) = 28.51'
12" CPP INV. OUT (NE) = 28.15'

EXT. CATCH BASIN
RIM ELEV. = 32.97'
8" CMP INV. IN (SW) = 28.22'
18" CMP INV. IN (NW) = 27.72'
12" CPP INV. IN (NE) = 27.67'
18" CMP INV. OUT (S) = 27.57'

EXT. CATCH BASIN
RIM ELEV. = 32.35'
18" CMP INV. IN (N) = 24.25'
24" CPP INV. OUT (S) = 24.15'
PRP. SWAP TO SOLID DMH COVER

EXT. CATCH BASIN
RIM ELEV. = 32.57'
30" CPP INV. IN (W) = 20.41'
30" CPP INV. OUT (SE) = 19.85'
NEW 12" INV. IN (W) = 28.00'

EXT. CATCH BASIN
RIM ELEV. = 31.10'
12" PVC INV. IN (SW) = 24.80'
24" CPP INV. IN (N) = 21.00'
30" CPP INV. OUT (E) = 20.80'
PRP. SWAP TO SOLID DMG COVER
NEW 12" INV. IN (W) = 28.20'

EXT. CATCH BASIN
RIM ELEV. = 30.55'
6" CPP INV. IN (W) = 25.55'
12" PVC INV. IN (S) = 25.00'
12" PVC INV. OUT (NE) = 24.93'

EXT. CATCH BASIN
RIM ELEV. = 32.06'
12" CPP INV. OUT (SE) = 29.56'

PRP. FILTERRA UNIT
(FTPD0606 SPEC)
8'W x 6'D VAULT
INLET ELEV. = 32.2'
12" INV. OUT = 28.62'

PRP. FILTERRA UNIT
(FTPD0608 SPEC)
10'W x 6'D VAULT
INLET ELEV. = 32.0'
12" INV. OUT = 28.42'

PRP. LANDSCAPE AREA
MULCHED PLANTING BEDS W/
PERENNIALS ABUTTING PARKING
AND WALKWAY. LAWN IN CENTER
FOR SEASONAL OUTDOOR SEATING

PRP. LANDSCAPE AREA
MULCHED PLANTING
BED W/ PERENNIALS

"RED MAPLE"

12.6'
7.5'
15.0'
19.0'
10.0'
10.0'
10.0'
19.0'
1.50'
2.50'
11.25'
11.50'
13.50'

GRID

GRAPHIC SCALE
0 10 20 30 40 (FEET)

LEGEND

- PROPERTY LINE
- SETBACK
- ABUTTER PROP. LINE
- EXT. PAVEMENT
- PRP. PAVEMENT
- PRP. CONCRETE
- EXT. CURB
- PRP. CONCRETE CURB
- EXT. BUILDING
- PRP. BUILDING
- PRP. PARKING
- EXT. CROSSWALK
- PRP. CROSSWALK
- EXT. STONEWALL
- PRP. OPEN SPACE
- EXT. STOCKADE FENCE
- EXT. LARGE TREE (CONIFEROUS)
- EXT. OVERHEAD ELEC (OHU)
- EXT. POWER POLE
- EXT. GUY ANCHOR
- EXT. WATER LINE (W)
- EXT. WATER HYDRANT
- EXT. STORM LINE (D)
- PRP. STORM LINE (D)
- EXT. CATCH BASIN
- PRP. CATCH BASIN
- DRAINAGE FLOW ARROW
- EXT. MAJOR CONTOUR (XXX)
- EXT. MINOR CONTOUR (XXX)
- PRP. MAJOR CONTOUR (XXX)
- PRP. MINOR CONTOUR (XXX)
- PRP. SPOT GRADE (102.0' X)

TAX MAP 9, LOT 134

NO.	DESCRIPTION	DATE
	REVISIONS	

STATE OF MAINE
KENNETH A. WOOD
No. 5992
LICENSED PROFESSIONAL ENGINEER

LANDSCAPING PLAN
MAINE MEAT BUTCHER & RESTAURANT
5 WHIPPLE ROAD, KITTERY, MAINE

FOR:
JARROD SPANGLER
7 WALLINGFORD SQUARE, SUITE 104
KITTERY, ME 03904

ATTAR ENGINEERING, INC.
CIVIL ◆ STRUCTURAL ◆ MARINE ◆ SURVEYING
1284 STATE ROAD – ELIOT, MAINE 03903
PHONE: (207)439-6023 FAX: (207)439-2128

SCALE:	APPROVED BY:	DRAWN BY:
1" = 10'		MJS
DATE:		REVISION DATE:
03/05/24		– : –
JOB NO: 23088	FILE: 5 WHIPPLE BASE.DWG	SHEET: X

MAP 9, LOT 134

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JANET T. MILLS
GOVERNOR

MELANIE LOYZIM
COMMISSIONER

February 1, 2024

Maine Meat
ATTN: Jarrod Spangler
7 Wallingford Square, Unit 104
Kittery, ME 03904

Re: Best Automotive Site, 5 Whipple Road, Kittery, Maine
No Further Action Assurance Letter - Voluntary Response Action Program

Dear Jarrod Spangler:

The Maine Department of Environmental Protection ("Department") has reviewed your application to the Department's Voluntary Response Action Program ("VRAP"). The application and associated reports were submitted to the Department with the request that the property referred to as "Best Automotive" in the Department's VRAP records (#REM01058), located at 5 Whipple Road in **Kittery**, identified on the Town of Kittery's Tax Map 9 as Lot 134, further described in **Book 14313, Page 749,** at the York County Registry of Deeds, and generally depicted in the figure included as Attachment A to this letter ("Site") participate in the VRAP, and Maine Meat ("Applicant"), as applicant to the VRAP, receive the protections provided by the *Voluntary Response Action Program* law, 38 M.R.S. § 343-E (1993).

Department staff has reviewed the following reports and supporting documents for the Site (hereinafter collectively referred to as the "Reports"):

- Phase I Environmental Site Assessment, TRC, August 17, 2023
- Sampling and Analysis Plan, TRC, September 19, 2023
- Limited Phase II Environmental Site Assessment, TRC, December 2023
- UST Facility Closure Site Assessment Report, TRC, December 2023
- Maine Voluntary Response Action Program Application Package, TRC, December 28, 2023
- Environmental Media Management Plan, TRC, January 2024
- Vapor Intrusion Assessment, TRC, January 26, 2024

The Site consists of 1 lot, is approximately 0.59 acres, and has historically and currently been used as an automotive filling station and repair facility. The Site is adjacent to the Piscataqua River in an area of mixed commercial and residential development. The proposed future development of the Site includes use as a restaurant and food grocer.

On January 6, 2003, The Department's VRAP issued a no further action assurance ("NFAA") letter for the Site. This current NFAA is intended to update and revise the one previously issued.

The Reports document the history of use at the Site as a railroad depot as early as 1919, followed by a filling station and automotive repair facility as early as 1931. In 1993, a release of approximately 2,000 gallons of gasoline was discovered from leaking Site underground storage tanks ("USTs"), which entered a storm drain and discharged into a nearby wetland adjacent to the Piscataqua River. Subsequent remedial actions included removal of free phase petroleum product from the wetland and storm drain system, the installation of a soil vapor extraction system around the UST area to improve soil quality, and the installation and sampling of monitoring wells. Based on correspondence dated November 2, 1995, the Department was satisfied with these remedial actions and later issued the January 6, 2003 NFAA referenced above.

The Reports document the historical and current use of the Site as a recognized environmental condition.

The Reports document the 2023 removal of an empty 15,000-gallon gasoline UST, which was the only remaining UST left on-Site. The tank, associated piping, and approximately five cubic yards of petroleum-impacted soil was removed in accordance with Department Chapter 691. The Reports also document the removal of an in-ground hydraulic lift located in the Site garage. Liquid associated with the lift system was sampled and submitted for laboratory analysis of polychlorinated biphenyls (PCBs). No PCBs were detected in this sample. Materials from all removal actions were properly disposed of at a licensed facility.

The Reports document the 2023 advancement of three soil borings which were converted to monitoring wells, and sampling of soils associated with the in-ground hydraulic lift. Potentially accessible soil samples were collected and analyzed from each boring and groundwater samples were collected from each monitoring well. Several contaminants were detected in site soils, but at concentrations below the applicable Commercial Worker Exposure Scenario in the Department's "Remedial Action Guidelines for Contaminates Sites" ("RAGs"), effective November 15, 2023. Extractable petroleum hydrocarbons, chromium and lead were detected above the Residential RAGs in one monitoring well (MW-2), and arsenic was detected above the Residential RAG in all three monitoring wells. The area is served by public water with the exception of three private wells located within 2,500 feet of the Site. Based on the physical/chemical characteristics of Site contaminants, and the locations and depths of the private wells identified, it is unlikely Site contaminants will impact these wells.

The Reports include the "Environmental Media Management Plan" ("EMMP"), approved by the Department, which outlines proper notification as well as environmental media handling and disposal procedures for the Site.

The Reports include a memo documenting a risk assessment of vapor intrusion into the on-Site building by using the United States Environmental Protection Agency's 2015 vapor intrusion guidance. Based on the findings of this memo, a complete on-Site vapor intrusion pathway is highly unlikely.

No recognized environmental conditions other than those described in the Reports were reported to the Department in the Applicant's VRAP application.

Based on the information presented in the Reports, the Department considers no further investigations or remedial actions are necessary at the Site at this time, provided the conditions of approval listed below are followed:

1. The extraction of groundwater at the Site is prohibited without the express written permission of the Department.

2. The Site must only be used for industrial and/or commercial purposes, and must not be used for residences, schools, childcare facilities, or long-term health care facilities unless the express written permission of the Department is obtained to use the Site for those purposes.

3. Soils and groundwater that remain located *in situ* at the Site and that may be disturbed during future redevelopment activities (e.g., future construction, additions, utility work, emergency repairs, etc.) may not be moved off-Site without the express written permission of the Department. In order to minimize soil disturbance and limit potential dermal and oral contact, Site soils and groundwater must be managed in accordance with the most recent Department-approved environmental media management plan.

4. In order to minimize soil disturbance and limit potential dermal and oral contact with soil, either the existing paved area and buildings at the Site must be maintained or future development must provide for an appropriate Department-approved engineered cover system.

5. New buildings constructed at the Site must include a Department-approved vapor barrier that is installed according to the manufacturer's specifications and maintained in the future, unless the express written permission of the Department is obtained to exclude such a system from the design of a new building or to terminate its use once installed.

6. A Declaration of Environmental Covenants, in accordance with the *Maine Uniform Environmental Covenants Act*, 38 M.R.S. §§ 3001–3013 (2005), incorporating conditions 1 through 5 above, and that is subject to Department review and approval, must be executed for the Site and must be recorded at the York County Registry of Deeds. A copy of the recorded Declaration of Environmental Covenants must be supplied to the Department's VRAP within thirty (30) days of being recorded.

7. A copy of this letter must be recorded at the York County Registry of Deeds. A copy of the recorded document must be supplied to the Department's VRAP within thirty (30) days of being recorded.

The VRAP's evaluation of the environmental risks present at the Site was based on the conditions listed above. Prior to undertaking any activity or land use that would alter the conditions of approval listed above, the Applicant, their successors, assigns and/or affiliates must obtain the VRAP's written approval and must obtain the Department's written consent to amend or terminate the Declaration of Environmental Covenants described above, if needed to complete the proposed activity.

The VRAP will not require further remedial actions by the Applicant, or their successors, assigns and/or affiliates, and the persons qualified for protection under 38 M.R.S. § 343-E(6), provided they comply with the conditions of this letter.

Therefore, the Applicant, their successors, assigns and/or affiliates, and the persons qualified for protection under 38 M.R.S. § 343-E(6) are entitled to protection from liability to the extent provided by 38 M.R.S. § 343-E, except that the protection from liability conferred by the VRAP is not granted to or assignable to any person, entity, or government agency that caused or is otherwise responsible for a release of petroleum, hazardous wastes, or hazardous substances at the Site or that has a Hazardous Waste Generator Closure obligation associated with the Site. This protection from liability will be limited to the matters addressed by and identified by the Reports, including the extent and concentration of existing contamination by petroleum and/or hazardous constituents described in the Reports, and is subject to the qualifications and conditions set forth in this letter and in 38 M.R.S. § 343-E. VRAP liability protections under 38 M.R.S. § 343-E do not limit the Department's enforcement authorities for non-compliance with other laws administered by the Department, including, but not limited to, lead abatement and asbestos regulations.

Given the age of the structure located at the Site, it must be assessed for the presence of asbestos containing material ("ACM") and lead-based paint prior to demolition or renovation. In the event that ACM and/or lead-based paint are identified, these materials must be handled, abated, removed, or disposed of in accordance with all applicable regulations. For more information please contact the Department's Asbestos and Lead Hazard Prevention Program staff at (207) 287-7688.

If you have any questions regarding this letter, please feel free to call David Chapman of my staff at (207) 287-7688.

Sincerely,

Melanie Loyzim
Commissioner
Maine Department of Environmental Protection

cc: TRC, Attn: Emily Wassmer
Seven Rivers Law Office, Attn: Sam Harkinson
Chris Redmond, Department VRAP Coordinator

STATE OF MAINE
KENNEBEC, ss.,

{Month} _____, 2024

Then personally appeared the above-named _____, the _____ of the Bureau of Remediation & Waste Management and duly authorized delegee for the Commissioner, and acknowledged the foregoing instrument to be his/her free act and deed, and the free act and deed of the Department of Environmental Protection.

_____
Notary Public

_____
(Print name)

My commission expires: _____

Routing Sheet for VRAP Documents

Review and Comment

Applicant Names: Maine Meat

Site: Best Automotive

Type of Document (Mark with "x"):

☒ No Further Action Assurance Letter
☐ Certificate of Completion

1. Drafted By Staff: (Mark with "x"):

☐ Nick Hodgkins ☒ Dave Chapman ☐ Rick Currie ☐ Laura Sheehan

☐ Becky Blais ☐ Eric Sroka ☐ Ted Wolfertz

2. Date staff sent draft for Unit Leader Review: 1/23/24

3. Approved by Unit Leader, Nick Hodgkins (Initial/Date): _____

4. First Review by Division Director
   a. Check one:
      i. ☐ Returned to staff with ☐ **no changes** ☐ **minor changes**
      ii. ☐ Returned to staff with **substantive changes** as noted below on (Date): _____
   b. Approved by DD for outside review (Initials & Date): _____

5. Sent to VRAP applicants for review and Comment (Initials & Date): _____
   a. Check one:
      i. ☐ Returned to DEP with **no changes**
(If no changes, route to Bureau Director for signature)
      ii. ☐ Returned to DEP with changes as noted with Mark-up on (Date): _____
   b. If Changes
      i. Approved by Unit Leader for final signature (Initials & Date): _____
      ii. Approved by Division Director for final signature & sent to Bureau Director for Signature (Initials & Date): _____

Return Signed Document to Staff for Distribution

5 Whipple Road - Proposed Trip Generation Rates

Mike Sudak <mike@attarengineering.com>

Thu 3/7/2024 1:27 PM

To:Maxim Zakian <mzakian@kitteryme.org>
Cc:Jason Garnham <JGarnham@kitteryme.org>;Ken Wood <Ken@attarengineering.com>

Max,

Following up on our phone call earlier this afternoon, I'm providing you with a trip generation calc in support of the SPR application for 5 Whipple Road.
I'm happy to provide this under more formal letterhead, should you need – just let me know.

As a disclaimer, these Land Use Codes (LUC) are based on the ITE Manual, 10th Edition, which is the most current one I am able to reference.

ITE LUC 140 – Manufacturing: 3.82 Trips per 1,000 sq. ft. gross floor area (GFA)
[3.82 x (1,328 sq. ft./1,000 sq. ft.)] – assumption of entire existing building
[3.82 x 1.328] = 5.07 trips

ITE LUC 820 – Shopping Center: 42.70 Trips per 1,000 sq. ft. GFA
[42.70 x (1,328 sq. ft./1,000 sq. ft.)] – assumption of entire existing building
[42.70 x 1.328] = 56.71 trips

ITE LUC 925* – Drinking Place: 11.34 Trips per 1,000 sq. ft. GFA
* this LUC appears to have changed to 975 in subsequent editions of the ITE Manual
[11.34 x 2,076 sq. ft./1,000 sq. ft.)] – assumption of entire proposed addition
[11.34 x 2.076] = 23.54 trips

ITE LUC 931 – Quality Restaurant: 2.86 Trips per Seat
[30-seat dining area + 15-seat bar area proposed] = 45 seats proposed
[2.86 x 45] = 128.70 trips

Total Trip Yield:
[5.07 + 56.71 + 23.54 + 128.70] => 214.02 Vehicle Trips per Day

Even with some significant double-counting (assuming areas of the proposed development are occupied by multiple use generators), the total trip count is still well beneath the 400 Trips requirement of §16.7.10.C.(4).(s).

Please let me know if you have any questions/concerns.
Thanks and take care.
-Mike

Michael J. Sudak, E.I.
Civil Engineer
Attar Engineering, Inc.
1284 State Road
Eliot, Maine 03903
Ph: (207) 439-6023
Fax: (207) 439-2128
Cell: (978) 317-3398

ATTAR
ENGINEERING, INC
CIVIL • STRUCTURAL • MARINE

MAINE MEAT BUTCHER & RESTAURANT
5 WHIPPLE ROAD, KITTERY, MAINE
STORMWATER MANAGEMENT STUDY

Project No.: 23088 February 13th, 2024

♦ Scope

This stormwater management plan has been prepared for PB Real Estate Investments, LLC. and Jarrod Spangler's proposed redevelopment of an existing commercial development (former gas station use) into a butcher shop, restaurant, and bar located at the corner of Whipple Road and Rogers Road. The entire parcel contains approximately 0.51 acres; the site development will include the retention and renovation of the existing commercial building, a 2,076 square-foot addition, associated parking, egress, and utility services. The existing condition of the subject parcel is almost entirely impervious, and this redevelopment will reduce the overall amount by 4,732 square feet (~21.2% of total parcel area).

♦ Site and Watershed Description

The project site is located in the Portsmouth Harbor watershed, which empties to the Atlantic Ocean. A 7½ minute series U.S.G.S. map of the project area is attached.

The existing site is heavily developed with asphalt parking areas, concrete underground storage tanks and former fueling canopy, and the existing 1,328 sq. ft. commercial building. The remainder of the lot contains small strips of grassed area that abut the curbed sidewalks along Whipple Road and that abut the neighboring residential uses along Whipple Road. The site contains in-line portions of the Town of Kittery closed stormwater system, including several catch basins and culverted drainage ways which have existed for close to 100 years. These catch basins collect impervious runoff which leaves the site heading east, before ultimately crossing Whipple Road and being received by the harbor.

♦ Soils/Hydrologic Soil Groups

Soil types and their respective Hydrologic Soil Groups (HSG) were determined from the Soil Survey of York County, Maine. The site consists predominantly of Urban Fill, with some Hydrologic Soil Group D soils. Specifics are included in the attached stormwater analysis plan sheets.

♦ Methodology

The stormwater quantity analysis will be conducted using the HydroCAD Stormwater Modeling System by Applied Microcomputer Systems. The analysis determines the "Existing Condition" and "Developed Condition" stormwater flows. Both cases are analyzed for the 2, 10 and 25-year, 24-hour frequency storm events. The Existing Condition analyzes the site as it currently exists, and the Developed Condition models the site with the proposed improvements described above.

♦ Water Quantity Analysis

Existing Condition

The site was analyzed with four subcatchments (SC), each being comprised of the surface runoff which is dedicated to a different existing catch basin within the municipal closed system. SC 1 represents runoff which flows to the western existing catch basin, which does not connect to the remaining closed system and which exits the site heading south towards the church across the street on Whipple Road. SCs 2 & 3 represent runoff which flows to the

northern and southern on-site catch basins, respectively. SC 4 represents runoff which flows to the off-site catch basin abutting the curbed sidewalk in the northern shoulder of Whipple Road. The catch basins described in SCs 2, 3, and 4 are all connected to one another, with accumulated culverted flows being received by the catch basin of SC 3 before exiting the site to the east with the remaining downstream closed system. Two analysis points (AP) are assigned for where the separate portions of the existing closed system exit the area of the site; southerly from SC 1 and easterly from SCs 2, 3, and 4. These APs were selected to provide convenient points to compare the Existing Condition flows to Developed Condition flows.

Developed Condition

The Developed Condition analysis consists of four total subcatchments as well, but with adjustments from the proposed site improvements. SC 1 and SC 4 represent the same structures as the Existing Condition. The existing northern and southern on-site catch basins are not proposed to be removed, but instead have their rim grates replaced with solid covers. This change combined with impervious surface regrading allows runoff to bypass these structures to reach the proposed bioretention areas and allow for stormwater retention and treatment to occur. The development proposes to construct two Filterra bioretention units, which are to be sited along the Whipple Road frontage and ultimately tie-in to the existing municipal closed system. SC 2 represents the runoff which flows to the western Filterra unit, and SC 3 represents the runoff which flows to the eastern Filterra unit.

Changes in Stormwater Flows

Tables showing Existing Condition peak flows, Developed Condition peak flows and the change in peak flow from Existing Condition to Developed Condition are presented on a separate page.

The analysis indicates decreases in peak flow at both APs for all storm events (2-, 10- and 25-year).

♦ **Summary**

The use of Filterra bioretention vaults will retain, attenuate, and treat all on-site stormwater flows prior to their discharge into the existing municipal closed system. No adverse effects are anticipated on any downstream properties or drainage structures for all analyzed storm events.

Sincerely;

Michael J. Sudak, E.I.
Staff Engineer

Mike Sudak

From: Joshua Stackhouse <Joshua.Stackhouse@ContechES.com>
Sent: Tuesday, February 13, 2024 11:12 AM
To: Mike Sudak
Cc: Ken Wood
Subject: RE: [EXTERNAL] 5 Whipple Road, Kittery - Filterra O&M Program
Attachments: Filterra Maintenance Steps (8-16).pdf; Filterra Vault OM Packet.pdf

Hi Mike,

I think the attached files might be more relevant, as they discuss use with systems that have top slabs. The maintenance steps file is a good snapshot at what is entailed, and this would be performed annually.

If the Town is looking for a 5-year maintenance contract to be in place like MEDEP requests, I can send you a list of companies we have trained to do this that would be able to draft up the contract.

Thanks,

Josh Stackhouse
Stormwater Consultant

Mob: 207.219.9110
www.conteches.com

From: Mike Sudak <mike@attarengineering.com>
Sent: Tuesday, February 13, 2024 10:39 AM
To: Joshua Stackhouse <Joshua.Stackhouse@ContechES.com>
Cc: Ken Wood <Ken@attarengineering.com>
Subject: [EXTERNAL] 5 Whipple Road, Kittery - Filterra O&M Program

Good Morning Josh,

Revisiting the 5 Whipple Road development in Kittery with a question that I'm hopeful you can help me out with. The Town has begun its review on the application that was submitted a few weeks ago, and one of the items they have requested from me is an Operation & Maintenance Program for the stormwater features of the proposed development. Typically this is a document I have no problem preparing myself, but given the Filterra units that we are proposing for this development I was wondering if there was some existing literature that would be applicable. I already took a look through your company's website and found the Owner's Manual (attached) which does include some routine maintenance guidelines, but I didn't know if there was another document catered specifically for post-construction upkeep of these units.

Any guidance would be greatly appreciated.
Thanks Josh – take care.
Thanks and take care.
-Mike

Michael J. Sudak, E.I.
Civil Engineer
Attar Engineering, Inc.
1284 State Road
Eliot, Maine 03903
Ph: (207) 439-6023
Fax: (207) 439-2128
Cell: (978) 317-3398

Filterra® Maintenance Steps

1. Inspection of Filterra and surrounding area

2. Removal of tree grate and erosion control stones

3. Removal of debris, trash and mulch

4. Mulch replacement

5. Clean area around Filterra

6. Complete paperwork and record plant height and width

Contech has created a network of Certified Maintenance Providers (CCMP's) to provide maintenance on Filterra systems. To find a CCMP in your area please visit www.conteches.com/maintenance

ATTAR
ENGINEERING, INC
CIVIL • STRUCTURAL • MARINE

Mr. Jason Garnham, Director of Planning and Development
Mr. Maxim Zakian, Town Planner
Town of Kittery, Maine
200 Rogers Road
Kittery, Maine 03904

January 30th, 2024
Project No. 23088

RE: Minor Site Plan Review Application
Maine Meat Butcher & Restaurant
5 Whipple Road, Kittery, Maine (Tax Map 9, Lot 134)

Dear Mr. Zakian & Mr. Garnham:

On behalf of PB Real Estate Investments, LLC., and Jarrod Spangler, I have enclosed for your review and consideration an Application for Minor Site Plan Review, along with associated Plan Set and attachments, for the above-referenced project.

The subject parcel is located at the intersection of Whipple Road and Rogers Road, contains approximately 0.33 acres, and is located in the Business Local (B-L) zoning district. Several conveyances are associated with this proposed development, which are attached and grant land to the Applicants to yield a new total of 0.51 acres for the subject parcel.

The existing condition of the subject parcel includes typical elements of the former gas station use – concrete storage tanks, fueling island and canopy, associated asphalt parking and egress areas, and a 1,328 sq. ft. single-story commercial building which housed an auto repair shop. The existing condition also includes multiple curb cuts along both Rogers Road and Whipple Road, as well as pavement extending to the northerly-abutting curbed greenspace identified as Town of Kittery property.

The Applicant proposes to retain the existing single-story building but remove all other elements of the former use, including the concrete pads, storage tank, and canopy. The retained structure shall be expanded with a 2,076 sq. ft. addition extending southwesterly and along the Whipple Road frontage for a total of ~3,400 sq. ft. of building footprint. This structure shall become a mixed-use commercial building with the northerly (existing) portion becoming a butcher shop and the southerly (addition) portion becoming restaurant and bar. These uses shall be serviced by a common pedestrian entrance located in the northwestern corner of the building.

As part of this project a significant portion of the existing impervious cover shall be revegetated. One curb cut shall be removed from both the Rogers Road and Whipple Road frontages, with small parking lots serving the expanded building being constructed on either side. The existing curbed sidewalk shall be retained and extended to serve the existing surrounding communities and the proposed development.

The subject parcel is currently served by municipal water and sewer, and the Applicant proposes to continue these services and increase line sizes as necessary. There is also an existing closed stormwater system of catch basins and culverts which runs through the site that shall be

retained and tied into through this development. On-site stormwater management is accomplished through a pair of Bioretention Vaults, which shall have 100% of the impervious surfaces of this development dedicated to them through a combination of sheet flow and guttered drainage. Changes have also been proposed to some grate types of the existing closed system, and the Applicant shall continue to work with the Town's Public Works Director on this matter.

We look forward to discussing this project with Town Staff at their earliest convenience. If any additional information is required, please contact me. Thank you for your assistance.

Sincerely,

Michael J. Sudak, E.I.

23088 Cover 30Jan2024.doc

PB Real Estate Holdings, LLC
7 Wallingford Square, Suite 104
Kittery, ME 03904

December 21st, 2023
Project No.: 23088

Mr. Jason Garnham, Director of Planning & Development
Mr. Maxim Zakian, Town Planner
Town of Kittery, Maine
200 Rogers Road
Kittery, ME 03904

Dear Mr. Garnham & Mr. Zakian:

Please be informed that Kenneth A. Wood, P.E., Michael J. Sudak, E.I. and other assigned staff at Attar Engineering, Inc. will be acting as the agents for the applications and permitting of the project on Whipple Road in Kittery, Maine.

Please contact me if I can provide any additional information.

Sincerely,

Jarrod Spangler & Shannon Hill
PB Real Estate Holdings, LLC

cc: Kenneth A. Wood, P.E, Michael J. Sudak, E.I., Attar Engineering, Inc.

Doc# 2004076789
Bk 14313 Pg 0749 - 0750
Received York SS
12/08/2004 3:52PM
Debra L. Anderson
Register of Deeds

QUITCLAIM DEED
(With Covenant)

KNOW ALL PERSONS BY THESE PRESENTS, that Rowell, LLC, a Maine limited liability company, in consideration of One Dollar and other valuable consideration paid by BWF Management LLC, a Maine limited liability company, whose mailing address is 5 Whipple Road, Kittery, Maine 03904, the receipt whereof is hereby acknowledged, does hereby REMISE, RELEASE, BARGAIN, SELL AND CONVEY and forever QUITCLAIM unto the said BWF Management LLC, its successors and assigns forever, the following described real estate:

See Exhibit A attached hereto and made a part hereof.

The real estate conveyed hereby is subject to a Right of First Offer to Rowell, LLC, of even or near date, recorded in the York County Registry of Deeds.

MAINE REAL ESTATE TRANSFER TAX PAID

TO HAVE AND TO HOLD, the same, together with all the privileges and appurtenances thereunto belonging, to the said BWF Management LLC, its successors and assigns forever, to use and behoof forever.

AND Rowell, LLC hereby **COVENANTS** with the said Grantee, its successors and assigns forever, that it will **WARRANT AND FOREVER DEFEND** the premises to the said Grantee, its successors and assigns forever, against the lawful claims and demands of all persons claiming by, through, or under it.

IN WITNESS WHEREOF, the said Rowell, LLC has hereunto caused this instrument to be signed and sealed this 3 day of December, 2004.

WITNESS:

Rowell, LLC

By: Jonathan B. Mapes mgr
Jonathan B. Mapes
Its Manager

STATE OF MAINE
York, ss. Dec 3, 2004

Then personally appeared the above-named Jonathan B. Mapes and acknowledged the foregoing instrument to be his free act and deed in his said capacity as Manager of Rowell, LLC.

Before me,

Notary Public/~~Attorney at Law~~
Print Name: FRED OVERTON
My Commission Expires: 5.16.2007

Exhibit A

(Rowell, LLC to BWF Management LLC)

A certain tract or parcel of land located in the Town of Kittery, County of York and State of Maine and more particularly bounded and described as follows:

Beginning at a point on the northerly line of Whipple Road, said point being the intersection of said northerly line of Whipple Road and the southeasterly line of the now discontinued York Harbor and Beach Railroad; running thence south 83°51' west along the northerly line of Whipple Road 96.33 feet to a radius point; running thence along a curve bearing to the right having a radius of 10 feet a distance of 22.53 feet to a point; running thence along the easterly line of Rogers Road, north 32°57' east 55 feet to a point at an angle in said road; running thence still along Rogers Road north 61°24'15" east 35.24 feet to a point; running thence along a roadway north 73°12'30" east 68.5 feet to a point; running thence still along said roadway north 89°9'15" east 43.68 feet to a point; running thence still along said roadway south 81°32'10" east 37.5 feet to a point; running thence south 41°29'40" east along the old location of Whipple Road, 55.04 feet to the southerly line of the discontinued York Harbor and Beach Railroad and lands of owner unknown; running thence south 73°12'30" west along said old Railroad line 144.60 feet to the point of beginning.

Meaning and intending to describe a portion of the same premises conveyed to Rowell, LLC and described as "Tract IV" in the deed of Rowell & Watson, Co. Inc. dated August 6, 2002 and recorded in Book 11860, Page 90 of the York County Registry of Deeds.

Also conveying herein by quitclaim covenants any interest that the Grantor may have in the property lying easterly of the above described premises and westerly of the premises now or formerly of David L. DesVergnes. See boundary line agreements reflected in the deed dated 1/19/88 and recorded in Book 4660, Page 10 of the York County Registry of Deeds. Excepting and reserving any portion of the above described premises conveyed as a result of the boundary line agreements reflected in deed dated 1/19/88 and recorded in Book 4660, Page 10 of the York County Registry of Deeds.

Subject to:

Highway taking by the State of Maine, recorded in Volume 7363, Page 253 of the York County Registry of Deeds.

END OF DOCUMENT

227 Atlantic Title

REAL ESTATE
PURCHASE AND SALE AGREEMENT
FOR PREMISES LOCATED ON 5 WHIPPLE ROAD (AKA 2 ROGERS ROAD), KITTERY MAINE

This Agreement made this __th day of August 2023, between BWF Management, LLC (the "**SELLER**"), and PB Real Estate Investments, LLC OR Jarrod Spangler and Shannon Hill, as assignable to a TBD, Real Estate Holding Company (the "**BUYER**").

WITNESSETH: That the **SELLER** agrees to sell and convey, and the **BUYER** agrees to buy certain real estate located in Kittery, Maine, known as or described as 5 Whipple Road (aka 2 Rogers Road), Kittery, Maine described in the deed recorded at York County Registry of Deeds at Book 14313, Page 0749 ("Premises").

1. **STRUCTURES, IMPROVEMENTS AND FIXTURES CONVEYED:** Included in the sale of the Premises are all components used in connection therewith including, if any, all wall-to-wall carpeting, drapery rods, screens, screen doors, storm windows and doors, shutters, fixtures appurtenant thereto, hot water heaters, plumbing and bathroom fixtures, electric and other lighting fixtures, mantels, refrigerator(s).

2. **PURCHASE PRICE:** The Purchase Price for the Premises shall be [redacted] which shall be paid at closing as follows:

   A deposit of earnest money in the amount of [redacted] is being held in an Escrow Account of the law firm Seven Rivers Law Office, PLLC, "Escrow Agent". The remainder of the purchase price shall be paid as follows: cash or wire transfer in the amount of [redacted] thousand dollars [redacted].

3. **DEED:** Title shall be conveyed by a Warranty Deed and shall be conveyed free and clear of all encumbrances except usual public utilities serving the Premises and any covenants of record.

4. **TRANSFER OF TITLE:** The transfer of title shall occur on or before six (6) months following the full execution of this Agreement (the "Closing"). The Closing shall be at the offices of Seven Rivers Law Office, PLLC or other place of mutual consent. Time is of the Essence.

5. **POSSESSION:** Full possession and occupancy of the Premises with all keys shall be given at the Closing, free and clear of all tenants and occupants, personal property and encumbrances except as stated herein. **BUYER** reserves the right to conduct a walk-through inspection upon reasonable notice to **SELLER** within 48 hours of the Closing.

6. **AGENT:** The undersigned **SELLER** and **BUYER** represent that neither party is represented by a real estate agent and no commissions are due as a result of this transaction.

7. **TITLE:** If **BUYER** desires an examination of title, they shall pay the cost thereof. Upon examination of title, if it is found the title is not marketable or is subject to encumbrances or other adverse matters unacceptable to the **BUYER**, then in that event, this Agreement may be deemed null and void and of no further force and effect and the **BUYER** shall be entitled to the immediate return of their deposit. The **BUYER** shall notify the **SELLER** no later than sixty (60) days following the execution of this Agreement as to whether or not title is acceptable. If the **BUYER** does not advise **SELLER** as to whether title is acceptable by noon on the forty-fifth day following the execution of this Agreement, then it shall be conclusively presumed that title is acceptable to the **BUYER** and that the Closing shall proceed without objection as to any title matters.

8. **INSURANCE:** The buildings on the Premises shall, until full performance of this Agreement, be kept insured against fire, with extended coverage, by the **SELLER**. In case of loss, all sums recoverable from said insurance shall be paid or assigned, on delivery of deed, to the **BUYER**, unless the Premises shall previously have been restored to their former condition by **SELLER**; or, at the option of either party, this Agreement may be rescinded, and the deposit refunded if any such loss exceeds $20,000.00 existing as of the Closing.

9. **PRORATIONS:** Taxes and fees, special assessments, rents, water and sewage bills, shall be pro-rated as of the date of closing in accordance with the practice prevailing in the Town of Kittery. The State of Maine Real Estate Transfer Tax shall be divided equally between **BUYER** and **SELLER**. **BUYER** shall pay for all oil remaining in heating oil tanks calculated as of the closing date or such earlier date as required to comply with lender requirements.

10. **STATUTORY DISCLOSURES:** To the extent that there is a need for statutory disclosures concerning the property, the following information is provided, in addition to the **SELLER'S** disclosure form that is attached hereto and incorporated by reference.

RADON: Radon, the product of decay of radioactive materials in rock may be found in some areas of Maine. Radon may pass into a structure through the ground or through water from a deep well. Testing can establish its presence and equipment is available to remove it from the air or water.

ARSENIC: Arsenic is a common groundwater contaminant in Maine that occurs at unhealthy levels in well water in many areas of the state. Tests are available to determine whether arsenic is present at unsafe levels, and equipment is available to remove it from water. The **BUYER** is encouraged to consult the Maine Department of Environmental Services private well testing recommendations to ensure a safe water supply if the subject property is served by a private well.

LEAD PAINT: Before 1978, paint containing lead may have been used in structures. The presence of flaking lead paint can present a serious health hazard, especially to young children and pregnant women. Tests are available to determine whether lead is present.

ASBESTOS: Asbestos was a substance commonly used in construction to mitigate the risk of damage from fire and fire related heat damage. The **SELLER** confirms that any asbestos that was used in conjunction with the construction of use of the Premises has been remediated by industry standards. The **SELLER** agrees that the **BUYER** has the right to perform testing to ensure that the Premises is free of asbestos to its complete satisfaction.

WATER AND SEWER: The **SELLER** understands that the Premises to be conveyed are served by public water and public sewer.

PRIVATE WATER SUPPLY AND PRIVATE SEWAGE DISPOSAL: The **SELLER** understands that the Premises to be conveyed are served by public water and public sewer, and not a private water supply and not a private sewer disposal.

METHAMPHETAMINE PRODUCTION: That the **SELLER** declares that to the best of its knowledge and belief no methamphetamine production has occurred upon the Premises.

PUBLIC UTILITY TARIFF: That to the best of **SELLER'S** knowledge there is no responsibility for any party to pay as a condition of continuing utility service a tariff with unamortized or ongoing charges.

INSULATION: That the **SELLER** would declare that he is without knowledge as to the insulation provided in the buildings that are on the Premises.

EPA DISCLOSURE: The **SELLER** discloses that the Premises to be conveyed were not initially constructed prior to 1978. Accordingly, **BUYER** is advised of website for review of Lead Paint Disclosure and the **BUYER** further acknowledge receipt of the Lead Warning Handbook website information.

11. **INSPECTIONS:** The **SELLER** has provided the **BUYER** with an opportunity to have the Premises inspected, and such inspection was completed on or before the Closing Date.

12. **FINANCING:** This Agreement is contingent upon **BUYER** obtaining financing within one hundred (120) days of the execution of this Agreement. Should the **BUYER** be unable to obtain adequate financing to pay the Purchase Price, this Agreement shall be void, and the **BUYER** shall be entitled to the return of the Deposit. In its sole discretion, the **BUYER** shall have the right to waive this provision and allow the Closing to take place at the originally agreed to Purchase Price.

The **BUYER** or their lender shall, at their own expense, be entitled to obtain an appraisal of the Premises. Should an appraisal return a value for the Premises less than the Purchase Price, the **SELLER** shall either decrease the Purchase Price to match the appraised value, or void this Agreement, with the Deposit being immediately returned to the **BUYER**. In its sole discretion, the **BUYER** shall have the right to waive this provision and allow the Closing to take place at the originally agreed to Purchase Price.

13. **CONTINGENCIES:** The following contingencies shall be satisfied or waived by the **BUYER**, in the **BUYER'S** sole discretion, on or before the Closing Date:

a. The **BUYER'S** satisfactory inspection of the premises, which inspection shall be complete on or before ninety (90) days following the execution of this Agreement. Thereafter any and all inspections shall be waived by **BUYER** and shall NOT be a condition to the Closing.

b. The **BUYER'S** complete satisfaction that the **Premises** has been remediated to remove any environmental concerns of the **BUYER** or the **BUYER'S** lender at least thirty (30) days in advance of the Closing, including but not limited to any findings of a Brownfield study that is expected to be requested by the **BUYER**. The costs associated with the remediation shall be the responsibility of the **BUYER**. Should the **Premises** be unable to be remediated, following an inspection for such concerns, the **BUYER** shall have the sole right to terminate this Agreement, and have its deposit returned to it immediately.

14. **COSTS AND FEES TO CLOSING:** The Parties agree to pay the costs and fees to close this transaction as follows:

a. **BUYER** shall pay for its insurance policy and premiums, title search and examination, appraisal, and survey charges, if any; and

b. **SELLER** shall pay, any costs to record the deed, and any costs to remove encumbrances from title

15. **SELLER REPRESENTATIONS AND WARRANTIES:**

a. There is no litigation, arbitration, or other legal or administrative suit, action, proceeding, or investigation pending or to the best of **SELLER'S** knowledge, threatened against or involving **SELLER** or the ownership or operation of the Premises. including, but not limited to, any condemnation action relating to the Premises.

b. Other than those disclosed prior to the Closing, **SELLER** has not entered into any service, maintenance, supply, leasing, brokerage, listing, and/or other contracts relating to the Premises which will be binding upon **BUYER** after the Closing.

c. **SELLER** has not received notice of any material violation of any law or municipal ordinance, order, or requirement noted or issued against the Property by any governmental authority having jurisdiction over the Property, that has not been cured, corrected, or waived.

d. To the best of **the SELLER'S** knowledge, the Premises is free from mold and has not had mold related issues requiring remediation in the past.

e. From January 1, 2023, to the present, **SELLER** has caused the Premises, and the improvements thereto, to be maintained in substantially the same manner as in years prior pursuant to **SELLER'S** normal course of business.

f. **SELLER** has not filed a tax appeal for the Premises and to the best of **SELLER'S** knowledge, no tax appeal is currently pending for the Premises.

g. **SELLER** has not: (i) filed any voluntary or, to the best of **SELLER'S** knowledge, had involuntarily filed against it in any court or with any governmental body pursuant to any statute either of the United States or of any State, a petition in bankruptcy or insolvency or seeking to effect any plan or other arrangement with creditors, or seeking the appointment of a receiver; (ii) had a receiver, conservator, liquidating agent, or similar person appointed for all or a substantial portion of its assets; (iii) suffered the attachment or other judicial seizure of all, or substantially all, of its assets; (iv) given notice to any person or governmental body of insolvency; or (v) made an assignment for the benefit of its creditors or taken any other similar action for the protection or benefit of its creditors. **SELLER** is not insolvent and will not be rendered insolvent by the performance of its obligations under this Agreement.

16. BUYER REPRESENTATIONS AND WARRANTIES

a. **BUYER** has not been influenced to enter into this transaction nor has the **BUYER** relied upon any warranties or representations made by the **SELLER**, if any, not set forth or incorporated in this agreement or previously made in writing. **BUYER** represents and warrants that it understands the Premises is being sold "as is, where is" and relies on no representations except for those stated above.

b. **BUYER** is a limited liability company duly formed, validly existing, and in good standing under the laws of the State of Maine, is qualified to conduct business in the State of Maine, and has the requisite power and authority to enter into this Agreement and the instruments referenced herein, and to consummate the transactions contemplated hereby to the extent necessary to close, **BUYER** shall make available to **SELLER** all documents relating to their LLC including but not limited to operating agreement, certificate of formation and good standing.

17. ADDITIONAL PROVISIONS:

a. The Parties agree that time is of the essence throughout this Agreement.

b. Each party is to receive a fully executed duplicate original of this Agreement. This Agreement shall be binding upon the heirs, executors, administrators and assigns of both parties. To the extent necessary to close, **BUYER** shall make available to **SELLER** all documents relating to their LLC including, but not limited to, operating agreement, certificate of formation and good standing. Other than the statutory

disclosures and those set out herein, the **BUYER** understands that the **SELLER** has made no representations as to the premises (other than the Statutory Disclosures) and the **SELLER** has provided an opportunity for the **BUYER** to conduct tests and inspections as they deem appropriate and that the **BUYER** acknowledges that they are not relying upon any representations perceived or otherwise from the **SELLER** other than the Statutory Disclosures as to the condition of the premises.

c. **BUYER** has the right to assign its rights hereunder to a different entity prior to the Closing.

d. **SELLER** is a Maine Limited Liability Company and is fully authorized to enter into this Purchase and Sales Agreement and execute and deliver all documents and signatures necessary to close this Purchase and Sale Agreement. The **SELLER** shall make available appropriate consents customarily used in real estate transactions to evidence their authority.

e. This is a binding contract, and the effective date shall be when it is signed and dated. whether by electronic transfer or original, and all changes are initialed and dated by the **SELLER** and the **BUYER**.

f. A copy of this contract is to be received by all parties and, by signature, receipt of a copy is hereby acknowledged. This Agreement shall be binding upon the heirs, executors, administrators, and assigns of both parties.

1. This Agreement may be executed in one or more counterparts and shall become effective only when the Parties hereto have each executed one or more counterparts. Each counterpart shall be deemed an original, but all of the counterparts shall constitute one Agreement. A facsimile copy or an electronic copy of this Agreement and any signatures on any counterpart hereof shall be considered for all purposes as originals.

g. Both Parties have had the opportunity to retain counsel or professional advice regarding this transaction.

h. All representations, statements, and agreements made heretofore between the parties hereto are merged into this Agreement, which alone fully and completely expresses the respective obligations of the parties; and this Agreement is entered by each party after opportunity for investigation, neither party relying on statements or representations not embodied in this Agreement made by the other or on his/her behalf.

IN WITNESS WHEREOF, the parties have set their hands the day and year first written above.

[SIGNATURES ON FOLLOWING PAGE]

SELLER

BWF Management, LLC

Kathleen Furbish 8/14/23

By:
Its duly authorized member

BUYER

PB Real Estate Investments. LLC

By: Shannon Hill
Its duly authorized member

3/14/23

November ___, 2023

Sweet Bay Condominium
9 & 11 Whipple Road
Kittery, ME 03904

Re: Letter of Intent to enter into lot line agreement

Dear Sweet Bay Condominium Unit Owners:

This Letter of Intent ("Letter") outlines the basic terms upon which the parties intend to enter into a lot line agreement ("Agreement") between the parties' properties located on Whipple Road in Kittery, Maine.

Specifically, the parties agree that they will enter into a lot line agreement that sets the boundaries of their respective properties as set out on the attached survey plan. The Agreement will be in a form that will allow it to be recorded at the York County Registry of Deeds. The parties agree that the survey plan, as drafted, accurately shows the current lot lines between the parties' properties to the best of their knowledge.

As an inducement for Sweet Bay Condominium executing this Letter, PB Real Estate Holdings, LLC agrees to pay for any recording costs of the Agreement, as well as any preparation costs for the Agreement.

This letter will be binding on both parties for a period of not less than one (1) year. If no Agreement is executed in the three hundred and sixty-five (365) days following the execution of this Letter, then this Letter will no longer be binding on either party.

If this Letter correctly describes your understanding of the basic terms of the Transaction, please so indicate by signing, dating, and returning a copy of this Letter.

Sincerely,

Shannon Hill, Authorized Member of
PB Real Estate Holdings, LLC

ACCEPTED AND AGREED

Thomas Barry, Duly Authorized President
Sweet Bay Condominiums

Date: 04Dec2023

December
~~November~~ ___, 2023

10 Rogers Rd, LLC
32 Route 236
Kittery, ME 03904

Re: Letter of Intent to enter into lot line agreement

Dear Manager or Members of 10 Rogers Rd, LLC:

This Letter of Intent ("Letter") outlines the basic terms upon which the parties intend to enter into a lot line agreement ("Agreement") between the parties' properties located on Rogers Road in Kittery, Maine.

Specifically, the parties agree that they will enter into a lot line agreement that sets the boundaries of their respective properties as set out in the attached survey plan. The Agreement will be in a form that will allow it to be recorded at the York County Registry of Deeds. The parties agree that the survey plan, as drafted, accurately shows the current lot lines between the parties' properties to the best of their knowledge.

As an inducement for 10 Rogers Rd, LLC executing this Letter, PB Real Estate Holdings, LLC agrees to pay for any recording costs of the Agreement, as well as any preparation costs for the Agreement.

This letter will be binding on both parties for a period of not less than one (1) year. If no Agreement is executed in the three hundred and sixty-five (365) days following the execution of this Letter, then this Letter will no longer be binding on either party.

If this Letter correctly describes your understanding of the basic terms of the Transaction, please so indicate by signing, dating, and returning a copy of this Letter.

Sincerely,

12/13/23
Shannon Hill, Authorized Member of
PB Real Estate Holdings, LLC

ACCEPTED AND AGREED

Darren LaPierre
_____, Manager or Member(s) of
10 Rogers Rd, LLC

Date: 12-13-23

ATTAR ENGINEERING, INC.
CIVIL ◆ STRUCTURAL ◆ MARINE ◆ SURVEYING
1284 STATE ROAD – ELIOT, MAINE 03903
PHONE: (207)439–6023 FAX: (207)439–2128

SCALE: 1" = 2000'	APPROVED BY:	DRAWN BY: MJS
DATE: 12/28/23		REVISION DATE: – : –
JOB NO: 23088	FILE: WHIPPLE BASE.DWG	SHEET: 1 OF 1

LOCATION:
5 WHIPPLE ROAD
KITTERY, ME 03904
TAX MAP 22, LOT 4

INFORMATION:
USGS LOCATION MAP
7.5 MINUTE SERIES
KITTERY QUADRANGLE

PREPARED FOR:
JARROD SPANGLER
7 WALLINGFORD SQUARE
SUITE 104
KITTERY, MAINE 03904

100 foot Abutters List Report

Kittery, ME
December 21, 2023

Subject Property:

Parcel Number:	9-134	Mailing Address:	BWF MANAGEMENT LLC BWF MANAGEMENT LLC 5 WHIPPLE ROAD KITTERY, ME 03904-1700
CAMA Number:	9-134		
Property Address:	5 WHIPPLE ROAD		

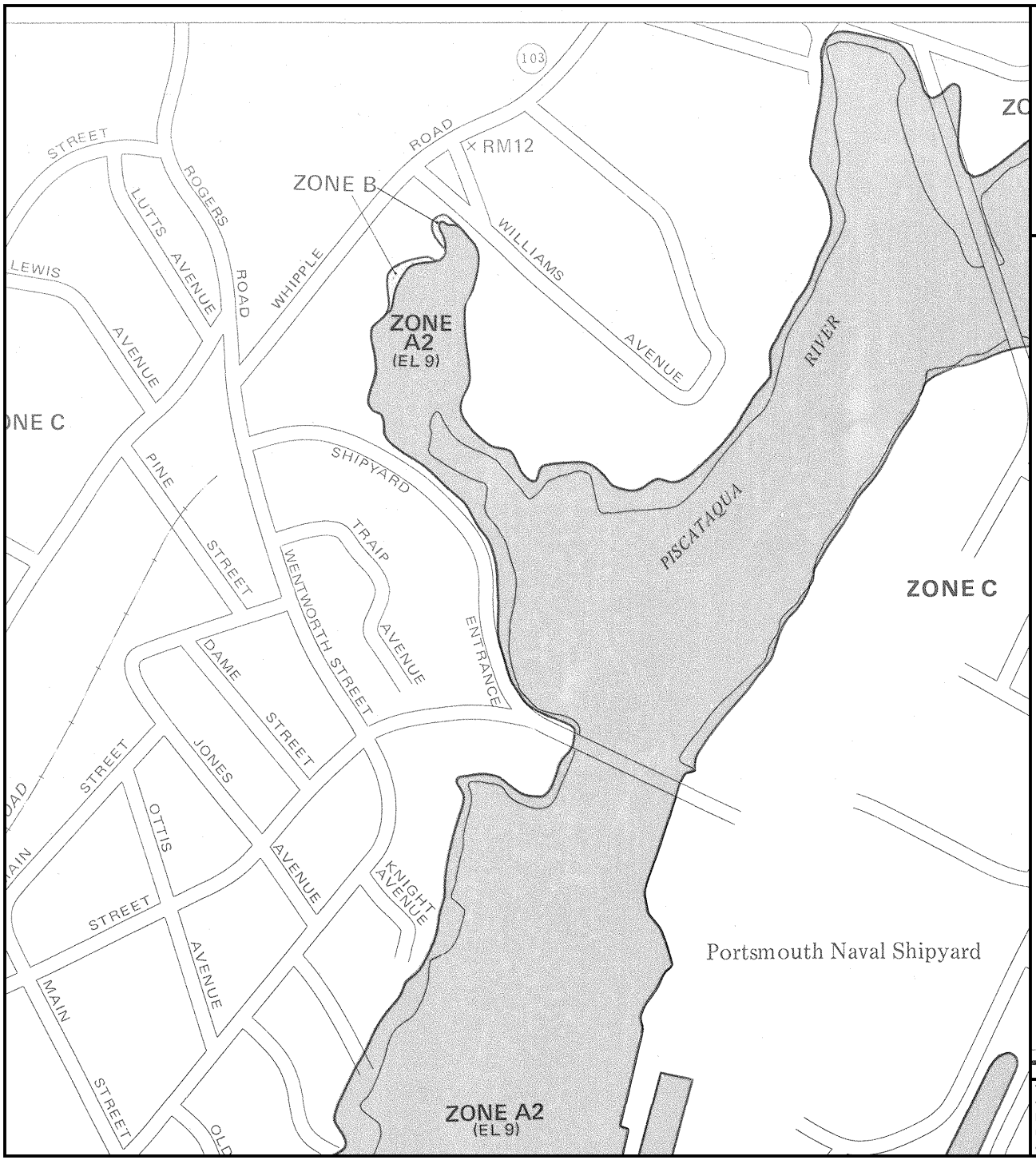
Abutters:

Parcel Number:	9-101	Mailing Address:	SZATKOWSKI LIVING TRUST SZATKOWSKI LIVING TRUST 1023 NORTH MADISON STREET ARLINGTON, VA 22205
CAMA Number:	9-101		
Property Address:	3 LUTTS AVENUE		
Parcel Number:	9-105	Mailing Address:	INHABITANTS OF KITTERY INHABITANTS OF KITTERY 200 ROGERS ROAD KITTERY, ME 03904-1428
CAMA Number:	9-105		
Property Address:	LUTTS AVENUE		
Parcel Number:	9-132	Mailing Address:	BETTY H FIORE REV TRUST BETTY H FIORE REV TRUST 14 ROGERS ROAD KITTERY, ME 03904
CAMA Number:	9-132		
Property Address:	14 ROGERS ROAD		
Parcel Number:	9-133	Mailing Address:	10 ROGERS ROAD LLC 10 ROGERS ROAD LLC 32 ROUTE 236 KITTERY, ME 03904
CAMA Number:	9-133		
Property Address:	10 ROGERS ROAD		
Parcel Number:	9-135	Mailing Address:	HART, DIANE HART, DIANE 9 WHIPPLE ROAD KITTERY, ME 03904
CAMA Number:	9-135		
Property Address:	9-11 WHIPPLE ROAD		
Parcel Number:	9-135	Mailing Address:	NANCY G. ROY REV. TRUST OF 2020 NANCY G. ROY REV. TRUST OF 2020 9 WHIPPLE ROAD KITTERY, ME 03904
CAMA Number:	9-135-A		
Property Address:	9 WHIPPLE ROAD		
Parcel Number:	9-135	Mailing Address:	BARRY, THOMAS M BARRY, THOMAS M 11 WHIPPLE ROAD KITTERY, ME 03904
CAMA Number:	9-135-B		
Property Address:	11 WHIPPLE ROAD		
Parcel Number:	9-17	Mailing Address:	INHABITANTS OF KITTERY INHABITANTS OF KITTERY 200 ROGERS ROAD KITTERY, ME 03904-1428
CAMA Number:	9-17		
Property Address:	12 WILLIAMS AVENUE		
Parcel Number:	9-23	Mailing Address:	ECO VENTURES ECO VENTURES 6 BRIDGEVIEW TERRACE KITTERY, ME 03904
CAMA Number:	9-23		
Property Address:	WHIPPLE ROAD		
Parcel Number:	9-24	Mailing Address:	R C BISHOP OF PORTLAND R C BISHOP OF PORTLAND 510 OCEAN AVENUE PORTLAND, ME 04103
CAMA Number:	9-24		
Property Address:	6-8 WHIPPLE ROAD		

100 foot Abutters List Report

Kittery, ME
December 21, 2023

Parcel Number:	9-24	Mailing Address:	SAINT RAPHAELS CHURCH SAINT RAPHAELS CHURCH 6 WHIPPLE ROAD KITTERY, ME 03904-1739
CAMA Number:	9-24A		
Property Address:	6-8 WHIPPLE ROAD		
Parcel Number:	9-39	Mailing Address:	THE DUANE KELLOGG, JR. & ELLEN L. KELLOGG LIV. TRU THE DUANE KELLOGG, JR. & ELLEN L. KELLOGG LIV. TRU 3 ROGERS ROAD KITTERY, ME 03904
CAMA Number:	9-39		
Property Address:	3 ROGERS ROAD		



APPROXIMATE SCALE

400 0 400 FEET

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TOWN OF
KITTERY, MAINE
YORK COUNTY

PANEL 8 OF 10
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
230171 0008 D

MAP REVISED:
JULY 3, 1986

Federal Emergency Management Agency

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for York County, Maine

December 21, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:2,040 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 30 60 120 180

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: York County, Maine
Survey Area Data: Version 22, Sep 5, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 19, 2020—Sep 20, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
LnC	Lyman loam, 8 to 15 percent slopes, rocky	5.5	32.0%
Ur	Urban land	11.6	68.0%
Totals for Area of Interest		**17.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

York County, Maine

LnC—Lyman loam, 8 to 15 percent slopes, rocky

Map Unit Setting

National map unit symbol: 2trq9
Elevation: 0 to 690 feet
Mean annual precipitation: 36 to 65 inches
Mean annual air temperature: 36 to 52 degrees F
Frost-free period: 60 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Lyman, rocky, and similar soils: 86 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lyman, Rocky

Setting

Landform: Mountains, hills
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Mountaintop, mountainflank, mountainbase, side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy supraglacial till derived from granite and gneiss and/or loamy supraglacial till derived from phyllite and/or loamy supraglacial till derived from mica schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loam
E - 3 to 5 inches: fine sandy loam
Bhs - 5 to 7 inches: loam
Bs1 - 7 to 11 inches: loam
Bs2 - 11 to 18 inches: channery loam
R - 18 to 28 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 11 to 24 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 14.03 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Hydric soil rating: No

Ur—Urban land

Map Unit Composition

Urban land: 90 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Linear
Across-slope shape: Linear

Typical profile

H1 - 0 to 6 inches: variable

Properties and qualities

Slope: 0 to 8 percent
Drainage class: Moderately well drained
Depth to water table: About 24 to 72 inches
Available water supply, 0 to 60 inches: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

U.S. Fish and Wildlife Service
National Wetlands Inventory

5 Whipple Road Development

December 21, 2023

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

OFFICE OF

KITTERY WATER DISTRICT

17 State Road
Kittery, ME 03904-1565
TEL: 207-439-1128
FAX: 207-439-8549
Email: info@kitterywater.org

Kittery Planning Board
200 Rogers Road
Kittery, ME 03904

December 27, 2023

Re: Proposed Redevelopment of 5 Whipple Road, Kittery

Dear Planning Board Members,

Please accept this letter as verification that the Kittery Water District does have the capacity to supply municipal water service to the proposed redevelopment of 5 Whipple Road, Kittery.

Sincerely,

Carl B. Palm
Superintendent

cc: Michael J. Sudak, E.I. – Attar Engineering, Inc.

TOWN OF KITTERY, MAINE

SEWER DEPARTMENT

200 Rogers Road, Kittery, ME 03904

Telephone: (207) 439-4646 Fax: (207) 439-2799

December 28, 2023

Re: Treatment Plant Capacity letter
5 Whipple Road
Kittery, ME 03904

This letter is to confirm the capacity of sanitary sewer discharge for the proposed Project at 5 Whipple Road in the Town of Kittery Maine. The sewer system (piping and pumping stations) and the treatment plant will have the capacity and ability to handle the discharge flow requiring treatment and disposal should the project get all necessary approvals from the Town of Kittery and the Kittery Sewer Department.

This letter is only confirming the Sewer Departments capacity for increased flow not project approval.

If you have further questions or concerns, please contact me.

Sincerely,

Timothy Babkirk
Town of Kittery
Superintendent of Sewer Services
1-207-439-4646
tbabkirk@kitteryme.org

Catalog # : _____ Project : _____

Prepared By : _____ Date : _____

AWL

All-Weather Wallpack - Low Profile

IP65 wet location

TITLE 24 COMPLIANT

OVERVIEW	
Lumen Range	1500
CCT	4000K
Wattage	15
Efficacy (LPW)	100
Weight lbs (kg)	3.7 lbs (EP model 4.5 lbs.)

FEATURES & SPECIFICATIONS

Construction
- Die-cast aluminum housing
- Available in Bronze, White, Black, and Silver

Optical
- UV-resistant, high-impact polycarbonate lens
- Minimum CRI of 70

Electrical
- Standard Universal Voltage - 120/277VAC dual primary at 60Hz
- Emergency Package (EP) option draws and additional 17W and includes self-test/self-diagnostic and a heater for cold weather operation to -25°C (-13°F)
- Standard photocontrol sensor for use in dusk to dawn applications that can be disabled to be used as and always on or switchable fixture.
- Optional PIR motion sensor (PIR) with up to 10' of detection and operational dusk to dawn. The light will activate when motion is detected in AC mode only and turn off after two minutes of inactivity.

Battery
- Maintenance-free NiCad Battery
- Operating temperatures: -25°C to 50°C (-13°F to 122°F)

Installation
- Universal pattern backplate provides 3" or 4" J-box mounting pattern with keyhole slots
- Can be surface mounted using the ½" conduit entry point at top of housing

Warranty
- 5 year warranty on all electronics and housing

Listings
- UL 924
- cULus Listed for Wet Locations
- IP65 rated
- State of California Title 24
- NFPA 101
- NFPA 70
- NEC
- UL Listed 90 minute emergency run time, 24 hour recharge time

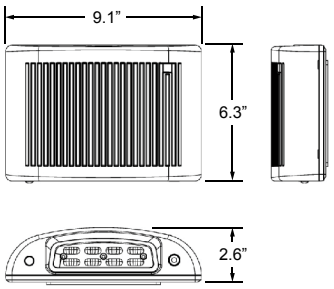
ORDERING GUIDE

TYPICAL ORDER EXAMPLE: **AWL BR EP**

Prefix	Housing Color	Controls
AWL - All-Weather Wallpack Low Profile	**BR** - Bronze **WH** - White **BK** - Black **SL** - Silver	**EP**[1] - Emergency Package **PIR**[2] - PIR motion sensor

1 - EP option includes self-test/self-diagnostic and a heater for cold weather operation to -25°C (-13°F)
2 - PIR option adds a PIR motion sensor and removes photocontrol

PRODUCT DIMENSIONS



Catalog # : _____ Project : _____

Prepared By : _____ Date : _____

Slim Wall Pack (WPSLS)

Small LED Slim Wall Pack

OVERVIEW	
Lumen Range	1,000 - 4,000
Wattage Range	12 - 40
Efficacy Range (LPW)	98 - 122
Weight lbs(kg)	3.8 (1.7)

QUICK LINKS

Ordering Guide | Performance | Dimensions | Photometrics

FEATURES & SPECIFICATIONS

Construction

- Rigid Precision Die cast-aluminum housing for durability and consistency.
- Vertical fins serve as a heat sink and resist accumulation of dust and debris.
- The Patent Pending thermal stacking heat removal technology extracts heat from within the housing moving it away from LEDs and integral components.
- Luminaire hinges open from the bottom to prevent leakage.
- Luminaire is proudly manufactured and tested in the U.S.
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory
- Shipping weight: 3.8 lbs in carton.

Optical System

- High-performance Chip On Board (COB) LEDs behind clear tempered glass for maximum light output.
- 3000K | 4000K | 5000K color temperatures.
- Minimum CRI of 71.
- Zero uplight.

Electrical

- High-performance driver features over-voltage, under voltage, short-circuit and over temperature protection.
- 0-10 volt dimming (10% - 100%) standard.
- Standard Universal Voltage (120-277 Vac) Input 50/60 Hz
- L70 Calculated Life: >100k Hours
- Total harmonic distortion: <20%
- Power factor: >.85
- Input power stays constant over life.
- Driver Off-State Power is 0 watts.
- Chip On Board (COB) LEDs with integrated circuit board mounted directly to the housing to maximize heat dissipation and promote long life.
- Components are fully encased in potting material for moisture resistance. Driver complies with FCC standards. Driver and key electronic components can easily be accessed.
- Minimum 2.5kV surge rating
- Operating temperature: -40°C to +50°C (-40°F to +122°F)

Controls

- Optional 120V electronic button Photocontol.
- Apertures for field or factory installed photocontrol.

Installation

- Surface mounts direct to J-box or wall.
- Features a bubble level and removable hinged face frame for ease of installation.

Warranty

- LSI LED Fixtures carry a 5-year warranty.
- 1 Year warranty on optional Button Photocell.

Listings

- Listed to UL 1598 and UL 8750.
- CSA Listed
- RoHS Compliant.
- DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.
- American Recovery and Reinvestment Act Funding Compliant.
- Suitable For Wet Locations.

Specifications and dimensions subject to change without notice.

Small LED Slim Wall Pack (WPSLS)

ORDERING GUIDE

Back to Quick Links

TYPICAL ORDER EXAMPLE: **WPSLS LED 1L UNV DIM 30 PC120 BZA**

Family Prefix	Lumen Package	Color Temp	Controls	Finishes
WPSLS - Small Slim Wall Pack	**1L** - 1000 Lumens	**30** - 3000K	**PC120** - 120V Photocontrol	**BZA** - Bronze
	2L - 2000 Lumens	**40** - 4000K	**PC208-277** - 208-277V Photocontrol	**WHT** - White
	4L - 4000 Lumens	**50** - 5000K		**BLK** - Black

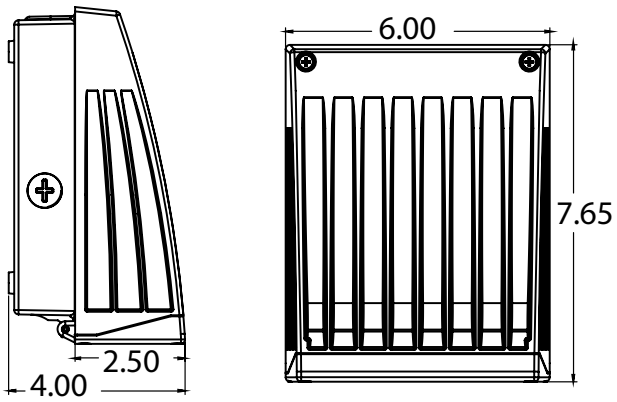
PERFORMANCE

Lumens	3000K		4000K		5000K		Wattage
	Delivered Lumens	Efficacy	Delivered Lumens	Efficacy	Delivered Lumens	Efficacy	
1L	1206	97.79	1206	97.79	1366	111.11	12
2L	2125	107.2	2125	107.2	2418	121.97	20
4L	3712	100.18	3712	100.18	4394	116.21	40

LED		HID			
Wattage	Annual Cost	Source Wattage	Total Wattage Used	Annual Cost	Annual Savings
12	$5	50	72	$52	$47
		70	90	$59	$54
20	$9	50	72	$52	$43
		70	90	$59	$50
		100	129	$77	$68
40	$18	100	129	$77	$59
		150	185	$100	$82
		175	210	$112	$94

PRODUCT DIMENSIONS

Back to Quick Links



PHOTOMETRICS

Back to Quick Links

Luminaire photometry has been conducted by a NVLAP accredited testing laboratory in accordance with IESNA LM-79-08. As specified by IESNA LM-79-08 the entire luminaire is tested as the source resulting in a luminaire efficiency of 100%. See http://www.lsi-industries.com/products/led-lighting-solutions.aspx for detailed photometric data.

WPSLS-4L-40

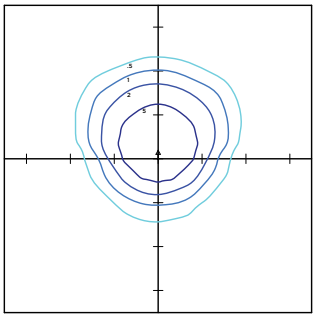
Luminaire Data

Wide Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	4,053
Watts	37.0
Efficacy	109
IES Type	Type III - Very Short
BUG Rating	B1-U0-G1

Zonal Lumen Summary

Zone	Lumens	%Luminaire
Low (0-30°)	1239.6	30.6%
Medium (30-60°)	2246.2	55.4%
High (60-80°)	559.6	13.8%
Very High (80-90°)	7.3	0.2%
Uplight (90-180°)	0.0	0.0%
Total Flux	4052.7	100%

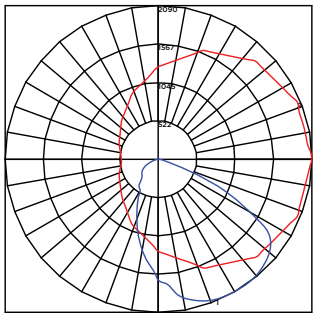
ISO FOOTCANDLE PLOT



10' Mounting Height/10' Grid Spacing

10 FC 5 FC 2 FC 1 FC

POLAR CURVE



Catalog # : _____ Project : _____

Prepared By : _____ Date : _____

Mirada Small Area (MRS)

Outdoor LED Area Light

IP66 IK08

OVERVIEW	
Lumen Package	6,000 - 30,000
Wattage Range	39 - 209
Efficacy Range (LPW)	112 - 163
Weight lbs(kg)	20 (9.1)
Control Options	IMSBT, ALB, ALS, 7-Pin, PCI

QUICK LINKS

Ordering Guide | Performance | Photometrics | Dimensions

FEATURES & SPECIFICATIONS

Construction

- Rugged die-cast aluminum housing contains factory prewired driver and optical unit. Cast aluminum wiring access door located underneath.
- Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling. Other standard LSI finishes available. Consult factory.
- Shipping weight: 27 lbs in carton.

Optical System

- State-of-the-Art one piece silicone optic sheet delivers industry leading optical control with an integrated gasket to provide IP66 rated seal.
- Proprietary silicone refractor optics provide exceptional coverage and uniformity in distribution types 2, 3, 4, 5W, FT, and LC/RC.
- Silicone optical material does not yellow or crack with age and provides a typical light transmittance of 93-95%.
- Zero uplight.
- Available in 5000K, 4000K, and 3000K color temperatures per ANSI C78.377
- Minimum CRI of 70.
- Integral louver (IL) and integral half louver (IH) options available for enhanced backlight control.

Electrical

- High-performance driver features over-voltage, under-voltage, short-circuit and over temperature protection.
- 0-10V dimming (10% - 100%) standard.
- Standard Universal Voltage (120-277 VAC) Input 50/60 Hz or optional High Voltage (347-480 VAC).
- L70 Calculated Life: >60k Hours
- Total harmonic distortion: <20%
- Operating temperature: -40°C to +50°C (-40°F to +122°F). 30L lumen packages rated to +40°C.
- Power factor: >.90
- Input power stays constant over life.
- Field replaceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).
- High-efficacy LEDs mounted to metal-core circuit board to maximize heat dissipation
- Driver is fully encased in potting material for moisture resistance and complies with FCC standards. Driver and key electronic components can easily be accessed.

Controls

- Optional integral passive infrared Bluetooth™ motion and photocell sensor. Fixtures operate independently and can be commissioned via iOS or Android configuration app.
- LSI's AirLink™ wireless control system options reduce energy and maintenance costs while optimizing light quality 24/7.

Installation

- Designed to mount to square or round poles.
- A single fastener secures the hinged door, underneath the housing and provides quick & easy access to the electrical compartment.
- Included terminal block accepts up to 12 ga. wire.
- Utilizes LSI's traditional B3 drill pattern.

Warranty

- LSI luminaires carry a 5-year limited warranty. Refer to https://www.lsicorp.com/resources/terms-conditions-warranty/ for more information.

Listings

- Listed to UL 1598 and UL 8750.
- Meets Buy American Act requirements.
- IDA compliant; with 3000K color temperature selection.
- Title 24 Compliant; see local ordinance for qualification information.
- Suitable for wet locations.
- IP66 rated Luminaire per IEC 60598-1.
- 3G rated for ANSI C136.31 high vibration applications are qualified.
- IK08 rated luminiare per IEC 66262 mechanical impact code
- DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

Mirada Small Area Light (MRS)

Type: _____

Have questions? Call us at (800) 436-7800

ORDERING GUIDE

Back to Quick Links

TYPICAL ORDER EXAMPLE: MRS LED 18L SIL FT UNV DIM 40 70CRI ALBCS1 BLK IH

Prefix	Light Source	Lumen Package	Lens	Distribution	Orientation[2]	Voltage	Driver
MRS - Mirada Small Area Light	**LED**	**6L** - 6,000 lms, 39W **9L** - 9,000 lms, 63W **12L** - 12,000 lms, 86W **15L** - 15,000 lms, 111W **18L** - 18,000 lms, 135W **21L** - 21,000 lms, 165W **24L** - 24,000 lms, 196W **30L** - 30,000 lms, 209W Custom Lumen Packages[1]	**SIL** - Silicone	**2** - Type 2 **3** - Type 3 **4** - Type 4 **5W** - Type 5 Wide **FT** - Forward Throw **LC** - Left Corner **RC** - Right Corner	**(blank)** - standard **L**- Optics rotated left 90° **R** - Optics rotated right 90°	**UNV** - Universal Voltage (120-277V) **HV** - High Voltage (347-480V)	**DIM** - 0-10V Dimming (0-10%)

Color Temp	Color Rendering	Controls (Choose One)	Finish	Options
50 - 5,000 CCT **40** - 4,000 CCT **30** - 3,000 CCT	**70CRI** - 70 CRI	**(Blank)** - None **Wireless Controls System** **ALSC** - AirLink Synapse Control System **ALSCS2** - AirLink Synapse Control System with 12-20' MH Motion Sensor **ALSCS4 -** AirLink Synapse Control System with 20-40' MH Motion Sensor **ALBCS1** - AirLink Blue Wireless Motion & Photo Sensor Controller (8-24' MH)[4] **ALBCS2 -** AirLink Blue Wireless Motion & Photo Sensor Controller (25-40' MH)[4] **Stand-Alone Controls** **EXT** - 0-10v Dimming leads extended to housing exterior **CR7P** - 7 Pin Control Receptacle ANSI C136.41[3] **IMSBT1 -** Integral Bluetooth™ Motion and Photocell Sensor (8-24' MH)[4] **IMSBT2 -** Integral Bluetooth™ Motion and Photocell Sensor (25-40' MH)[4]	**BLK -** Black **BRZ -** Dark Bronze **GMG -** Gun Metal Gray **GPT -** Graphite **MSV -** Metallic Silver **PLP -** Platinum Plus **SVG -** Satin Verde Green **WHT -** White	**(Blank)** - None **IH -** Integral Half Louver (Moderate Spill Light Cutoff)[2] **IL -** Integral Louver (Sharp Spill Light Cutoff)[2]

Need more information?
Click here for our glossary

Have additional questions?
Call us at (800) 436-7800

Accessory Ordering Information[5]

CONTROLS ACCESSORIES	
Description	**Order Number**
Twist Lock Photocell (120V) for use with CR7P	**122514**
Twist Lock Photocell (208-277) for use with CR7P	**122515**
Twist Lock Photocell (347V) for use with CR7P	**122516**
Twist Lock Photocell (480V) for use with CR7P	**1225180**
AirLink 5 Pin Twist Lock Controller	**661409**
AirLink 7 Pin Twist Lock Controller	**661410**
Shorting Cap for use with CR7P	**149328**

FUSING OPTIONS[7]	
Description	**Order Number**
Single Fusing (120V)	See Fusing Accessory Guide
Single Fusing (277V)	
Double Fusing (208V, 240V)	
Double Fusing (480V)	
Double Fusing (347V)	

SHIELDING OPTIONS	
Description	**Order Number**
Mirada Small	See Shielding Guide
Mirada Medium	
Mirada Large	
Zone Medium	
Zone Large	
Slice Medium	

1. Custom lumen and wattage packages available, consult factory. Values are within industry standard tolerances but not DLC listed.
2. Not available on "Type 5W" distribution.
3. Control device or shorting cap must be ordered separately. See Accessory Ordering Information.
4. Motion sensors are field configurable via the LSI app that can be downloaded from your smartphone's native app store.
5. Accessories are shipped separately and field installed.
6. "CLR" denotes finish. See Finish options.
7. Fusing must be located in hand hole of pole. See Fusing Accessory Guide for compatability.

ACCESSORIES

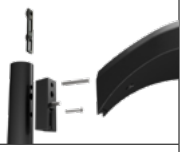
Back to Quick Links

MOUNTING ACCESSORIES

Side Arm

Universal Mounting Bracket
Mounts to ≥ 3" square or round (tapered/straight) poles with (2) mounting hole spaces between 3.5" to 5"

Part Number: BKA UMB CLR

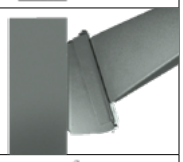


Quick Mount Plate
True one person installation to existing/new contruction poles with hole spaces beteen 2.4 to 4.6"

Part Number: BKS PQM B3B5 XX CLR

15° Tilt Quick Mount Plate
True one person installation to existing/new contruction poles with hole spaces beteen 2.4 to 4.6"

Part Number: BKS PQ15 B3B5 XX CLR



Tenon / Slipfitter

Adjustable Slipfitter
Mounts onto a 2" (51mm) IP, 2.375" (60mm) O.D. tenon and provides 180° of tilt (max 45° above horizontal)

Part Number: BKA ASF CLR

Square Tenon Top
Mounts onto a 2" (51mm) IP, 2.375" (60mm) O.D. tenon and allows for mounting up to 4 luminaires

Part Number: BKA XNM *

Square Internal Slipfitter
Mounts inside 4" or 5" square pole and allows for mounting up to 4 lumianires

Part Number: BKA X_ISF * CLR

Wall Mount/ Wood Pole

Wall Mount Bracket
Mounts onto vertical wall surface (hardware/anchors not included)

Part Number: BKS XBO WM CLR

Wood Pole Bracket
Mounts onto wooden poles (6" minimum OD, hardware/anchors not inlcuded)

Part Number: BKS XBO WP CLR

SHIELDING, POLES & MISC. ACCESSORIES

Shielding

Integral Louver
Field Install Integral Louver provides maximum backlight control by shiedling each individual row of LEDS

Part Number: 763445

Integral Half Louver
Field Install Integral Half Louver provides great backlight control without impacting front side distribution.

Part Number: 763446

External Shield
External shield blocks view of light source from anyside of luminaire, additional shielding configurations available

Part Number: 783607BLK (3") / 776538BLK (6")

Poles

Square Poles
14 - 39' steel and aluminum poles in 4", 5" and 6" sizes for retrofit and new construction

Part Number: 4SQ/5SQ/6SQ

Round Poles
10 - 30' steel and aluminum poles in 4" and 5" sizes for retrofit and new construction

Part Number: 4RP/5RP

Tapered Poles
20' - 39' steel and aluminum poles for retrofit and new construction

Part Number: RTP

Misc.

Bird Spikes
10' Linear Bird Spike Kit, 4' recommended per luminaire, includes silcone adhesive and application tool

Part Number: 736795

Replace CLR with paint finish description

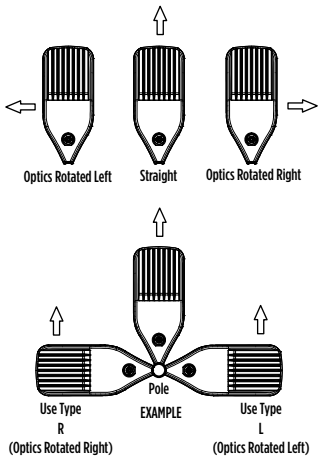
Repleace XX with SQ for square pole or RD for round pole (≥3" OD)

Replace * with S (Single), D180 (Double @180°), D90 (Double @90°), T90 (Triple), Q90 (Quad)

Replace _ with 4 (4" square pole) or 5 (5" square pole)

OPTICS ROTATION

Top View



ACCESSORIES/OPTIONS

Integral Louver (IL) and House-Side Shield (IH)

Integral louver (IL) and half louver (IH) accessory shields available for improved backlight control without sacrificing street side performance. LSI's Integral Louver (IL) and Integral House-Side Shield (IH) options deliver backlight control that significantly reduces spill light behind the poles for applications with pole locations close to adjacent properties. The design maximizes forward reflected light while reducing glare, maintaining the optical distribution selected, and most importantly eliminating light trespass. Both options rotate with the optical distribution.

Luminaire Shown with Integral Louver (IL)

Luminaire Shown with IMSBT Option

7 Pin Photoelectric Control

7-pin ANSI C136.41-2013 control receptacle option available for twist lock photocontrols or wireless control modules. Control accessories sold separately. Dimming leads from the receptacle will be connected to the driver dimming leads (Consult factory for alternate wiring).

Luminaire Shown with CR7P

Mirada Small Area Light (MRS)

Type: _____

Have questions? Call us at (800) 436-7800

PERFORMANCE

Back to Quick Links

DELIVERED LUMENS*

Lumen Package	Distribution	CRI	3000K CCT			4000K CCT			5000K CCT			Wattage
			Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	
6L	2	70	5918	149	B2-U0-G1	6136	155	B2-U0-G1	6122	155	B2-U0-G1	39
	3		6016	152	B1-U0-G2	6238	158	B1-U0-G2	6224	157	B1-U0-G2	
	4		5967	153	B1-U0-G2	6333	162	B1-U0-G3	6136	157	B1-U0-G2	
	5W		5690	144	B3-U0-G1	5899	149	B3-U0-G1	5886	1479	B3-U0-G1	
	FT		5822	147	B1-U0-G1	6037	152	B1-U0-G1	6023	152	B1-U0-G1	
	LC		6003	154	B1-U0-G2	6371	163	B1-U0-G2	6173	158	B1-U0-G2	
	RC		5964	153	B1-U0-G2	6329	162	B1-U0-G2	6132	157	B1-U0-G2	
9L	2	70	9091	145	B2-U0-G2	9484	152	B2-U0-G2	9462	151	B2-U0-G2	63
	3		9241	148	B2-U0-G2	9641	154	B2-U0-G2	9619	154	B2-U0-G2	
	4		9214	146	B2-U0-G3	9778	155	B2-U0-G3	9474	150	B2-U0-G3	
	5W		8740	140	B3-U0-G2	9118	146	B3-U0-G2	9097	144	B3-U0-G2	
	FT		8943	143	B2-U0-G2	9330	149	B2-U0-G2	9308	149	B2-U0-G2	
	LC		9269	147	B2-U0-G3	9837	156	B2-U0-G3	9531	151	B2-U0-G3	
	RC		9208	146	B2-U0-G2	9772	155	B2-U0-G3	9468	150	B2-U0-G3	
12L	2	70	12132	141	B3-U0-G2	12685	148	B3-U0-G2	12514	146	B3-U0-G2	86
	3		12333	143	B2-U0-G2	12894	150	B2-U0-G2	12721	148	B2-U0-G2	
	4		12277	143	B2-U0-G3	13029	152	B2-U0-G3	12623	147	B2-U0-G3	
	5W		11664	136	B4-U0-G2	12195	142	B4-U0-G2	12031	140	B4-U0-G2	
	FT		11935	139	B2-U0-G2	12479	145	B2-U0-G2	12311	143	B2-U0-G2	
	LC		12351	144	B2-U0-G3	13108	152	B2-U0-G3	12700	148	B2-U0-G3	
	RC		12271	143	B2-U0-G3	13022	151	B2-U0-G3	12617	147	B2-U0-G3	
15L	2	70	14220	128	B3-U0-G2	15167	137	B3-U0-G2	14488	131	B3-U0-G2	111
	3		14938	135	B2-U0-G2	15933	144	B2-U0-G2	15219	137	B2-U0-G2	
	4		14792	133	B2-U0-G4	15698	141	B2-U0-G4	15209	137	B2-U0-G4	
	5W		14304	129	B4-U0-G2	15257	137	B4-U0-G2	14574	131	B4-U0-G2	
	FT		14342	129	B2-U0-G2	15297	138	B2-U0-G2	14612	132	B2-U0-G2	
	LC		14881	134	B2-U0-G3	15793	142	B2-U0-G3	15301	138	B2-U0-G3	
	RC		14784	133	B2-U0-G3	15689	141	B2-U0-G3	15201	137	B2-U0-G3	
18L	2	70	16438	122	B3-U0-G2	17532	130	B3-U0-G3	16747	124	B3-U0-G2	135
	3		17267	128	B3-U0-G3	18417	137	B3-U0-G3	17592	131	B3-U0-G3	
	4		17101	127	B3-U-G4	18149	134	B3-U-G4	17584	130	B3-U-G4	
	5W		16535	123	B4-U0-G2	17636	133	B5-U0-G2	16846	125	B4-U0-G2	
	FT		16578	123	B3-U0-G2	17682	131	B3-U0-G2	16890	125	B3-U0-G2	
	LC		17204	127	B3-U0-G3	18258	135	B3-U0-G3	17689	131	B3-U0-G3	
	RC		17091	127	B2-U0-G3	18138	134	B2-U0-G3	17574	130	B2-U0-G3	
21L	2	70	19488	118	B3-U0-G3	20786	126	B3-U0-G3	19885	120	B3-U0-G3	165
	3		20472	124	B3-U0-G3	21835	132	B3-U0-G3	20857	126	B3-U0-G3	
	4		20279	123	B3-U0-G4	21521	130	B3-U0-G5	20851	126	B3-U0-G5	
	5W		19604	119	B5-U0-G3	20909	126	B5-U0-G3	19973	121	B5-U0-G3	
	FT		19655	119	B3-U0-G3	20964	127	B3-U0-G3	20025	121	B3-U0-G3	
	LC		20401	124	B3-U0-G4	21651	131	B3-U0-G4	20977	127	B3-U0-G4	
	RC		20268	123	B3-U0-G3	21509	130	B3-U0-G4	20840	126	B3-U0-G3	

*LEDs are frequently updated therefore values are nominal.

Mirada Small Area Light (MRS)

Type: _____

Have questions? Call us at (800) 436-7800

PERFORMANCE

Back to Quick Links

DELIVERED LUMENS*

Lumen Package	Distribution	CRI	3000K CCT			4000K CCT			5000K CCT			Wattage
			Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	Delivered Lumens	Efficacy	BUG Rating	
24L	2	70	21976	112	B3-U0-G3	23439	120	B3-U0-G3	22390	114	B3-U0-G3	196
	3		23085	118	B3-U0-G3	24622	126	B3-U0-G3	23519	120	B3-U0-G3	
	4		23190	117	B3-U0-G5	24758	124	B3-U0-G5	23888	120	B3-U0-G5	
	5W		22105	113	B5-U0-G3	23578	120	B5-U0-G3	22522	115	B5-U0-G3	
	FT		22164	113	B3-U0-G3	23640	121	B3-U0-G3	22581	115	B3-U0-G3	
	LC		23330	117	B3-U0-G4	24907	125	B3-U0-G4	24032	121	B3-U0-G4	
	RC		23117	117	B3-U0-G4	24744	124	B3-U0-G4	23874	120	B3-U0-G4	
30L	2	70	30078	144	B4-U0-G3	29485	143	B4-U0-G4	30697	147	B4-U0-G3	209
	3		31711	154	B3-U0-G3	31086	151	B3-U0-G3	32364	157	B3-U0-G3	
	4		30459	148	B4-U0-G5	29858	145	B4-U0-G5	31085	151	B4-U0-G5	
	5W		30588	149	B5-U0-G3	29985	146	B5-U0-G3	31218	152	B5-U0-G3	
	FT		31585	153	B3-U0-G4	30962	150	B3-U0-G4	32235	156	B4-U0-G4	
	LC		32303	155	B3-U0-G5	31666	152	B3-U0-G5	32968	158	B3-U0-G5	
	RC		31943	153	B3-U0-G4	31313	150	B3-U0-G4	32600	156	B3-U0-G5	

*LEDs are frequently updated therefore values are nominal.

ELECTRICAL DATA (AMPS)*

Lumens	120V	208V	240V	277V	347V	480V
6L	0.34	0.20	0.17	0.15	0.12	0.09
9L	0.52	0.30	0.26	0.23	0.18	0.13
12L	0.72	0.41	0.36	0.31	0.25	0.18
15L	0.93	0.53	0.46	0.40	0.32	0.23
18L	1.12	0.65	0.56	0.49	0.39	0.28
21L	1.38	0.80	0.69	0.60	0.48	0.34
24L	1.63	0.94	0.82	0.71	0.56	0.41
30L	1.74	1.00	0.87	0.75	0.60	0.43

*Electrical data at 25°C (77°F). Actual wattage may differ by +/-10%

RECOMMENDED LUMEN MAINTENANCE[1]

Ambient Temp	Lumen Multiplier				
C	0 hrs.[2]	25K hrs.[2]	50K hrs.[2]	75K hrs.[3]	100K hrs.[3]
0 C - 25 C	100%	95%	89%	84%	79%
40 C	100%	94%	87%	80%	74%

1. Lumen maintenance values at 25°C are calculated per TM-21 based on LM-80 data and in-situ luminaire testing.
2. In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X)the IESNA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip).
3. In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times NA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip).

PHOTOMETRICS

Back to Quick Links

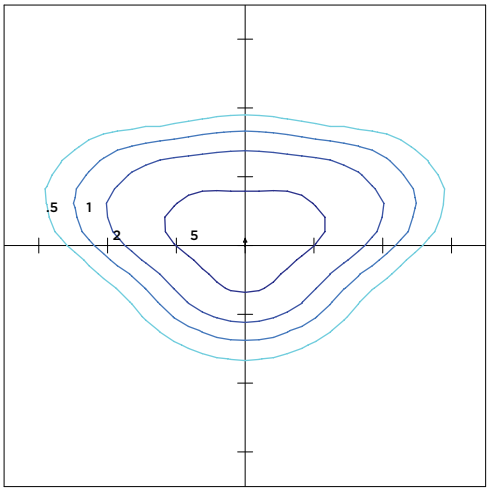
Luminaire photometry has been conducted by an accredited laboratory in accordance with IESNA LM-79. As specified by IESNA LM-79 the entire luminaire is tested as the source resulting in a luminaire efficiency of 100%.

MRS-LED-18L-SIL-2-40-70CRI

Luminaire Data	
Type 2 Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	17,532
Watts	135
Efficacy	130
IES Type	Type II - Short
BUG Rating	B3-U0-G3

Zonal Lumen Summary		
Zone	**Lumens**	**% Luminaire**
Low (0-30)°	2831	16%
Medium (30-60)°	10310	59%
High (60-80)°	4208	24%
Very High (80-90)°	184	1%
Uplight (90-180)°	0	0%
Total Flux	17532	100%

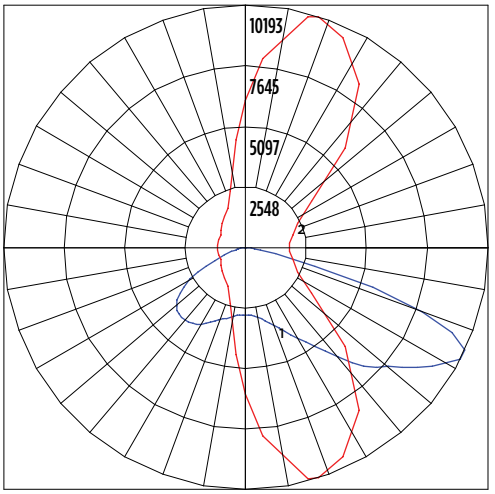
ISO Footcandle



20' Mounting Height / 20' Grid Spacing

5 FC 2 FC 1 FC 0.5 FC

Polar Curve



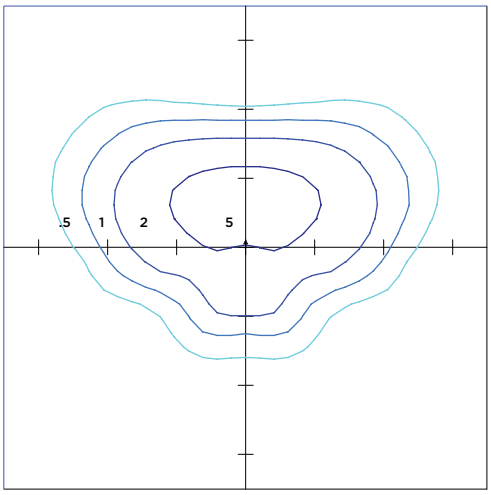
Vertical Plane Horizontal Cone

MRS-LED-18L-SIL-3-40-70CRI

Luminaire Data	
Type 3 Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	18,417
Watts	135
Efficacy	137
IES Type	Type III - Short
BUG Rating	B3-U0-G3

Zonal Lumen Summary		
Zone	**Lumens**	**% Luminaire**
Low (0-30)°	2329	13%
Medium (30-60)°	10634	61%
High (60-80)°	5246	30%
Very High (80-90)°	208	1%
Uplight (90-180)°	0	0%
Total Flux	18417	100%

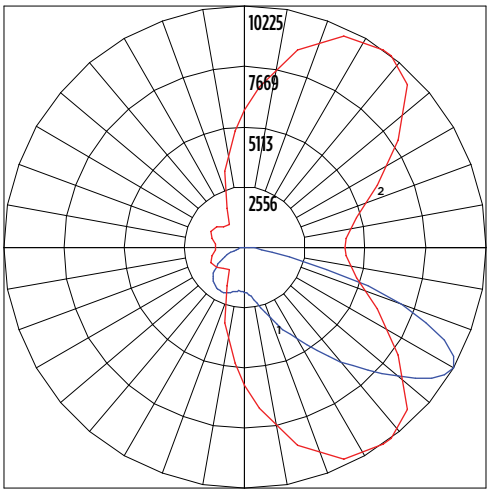
ISO Footcandle



20' Mounting Height / 20' Grid Spacing

5 FC 2 FC 1 FC 0.5 FC

Polar Curve



Vertical Plane Horizontal Cone

PHOTOMETRICS (CONT)

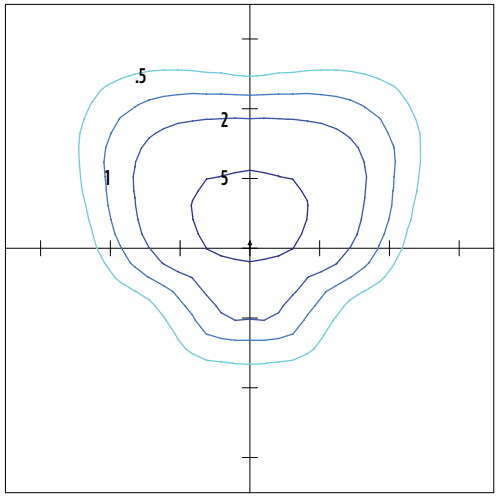
Back to Quick Links

MRS-LED-18L-SIL-FT-40-70CRI

Luminaire Data	
Type FT Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	17,682
Watts	135
Efficacy	131
IES Type	Type III - Short
BUG Rating	B3-U0-G2

Zonal Lumen Summary		
Zone	**Lumens**	**% Luminaire**
Low (0-30)°	2255	13%
Medium (30-60)°	9463	54%
High (60-80)°	5696	32%
Very High (80-90)°	268	2%
Uplight (90-180)°	0	0%
Total Flux	17682	100%

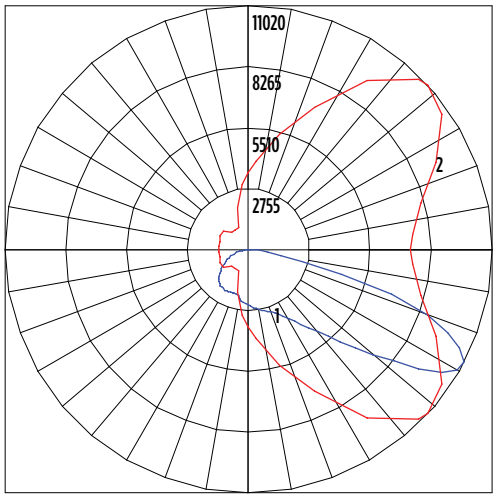
ISO Footcandle



20' Mounting Height / 20' Grid Spacing

5 FC 2 FC 1 FC 0.5 FC

Polar Curve



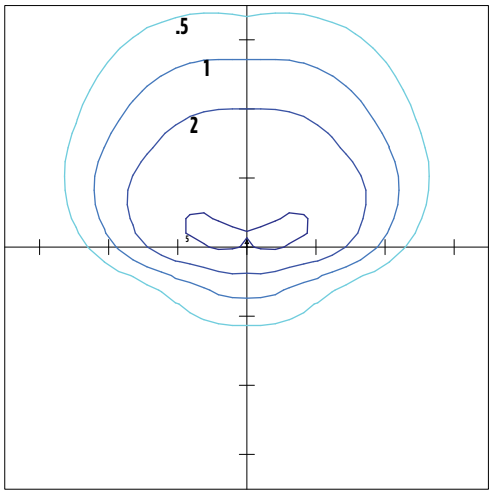
Vertical Plane Horizontal Cone

MRS-LED-18L-SIL-4-40-70CRI

Luminaire Data	
Type 4 Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	18,149
Watts	135
Efficacy	134
IES Type	Type IV - Very Short
BUG Rating	B3-U0-G4

Zonal Lumen Summary		
Zone	**Lumens**	**% Luminaire**
Low (0-30)°	1671	9%
Medium (30-60)°	7615	42%
High (60-80)°	8074	44%
Very High (80-90)°	790	4%
Uplight (90-180)°	0	0%
Total Flux	18149	100%

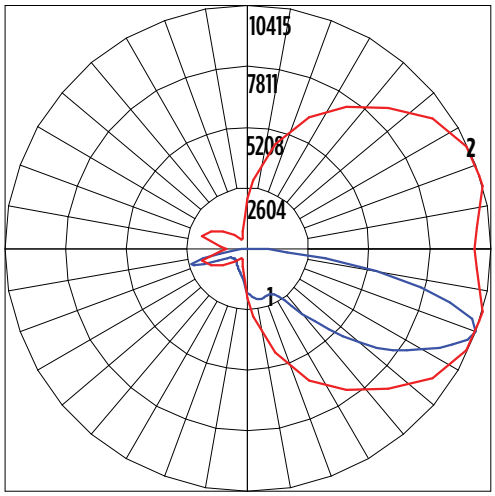
ISO Footcandle



20' Mounting Height / 20' Grid Spacing

5 FC 2 FC 1 FC 0.5 FC

Polar Curve



Vertical Plane Horizontal Cone

PHOTOMETRICS (CONT)

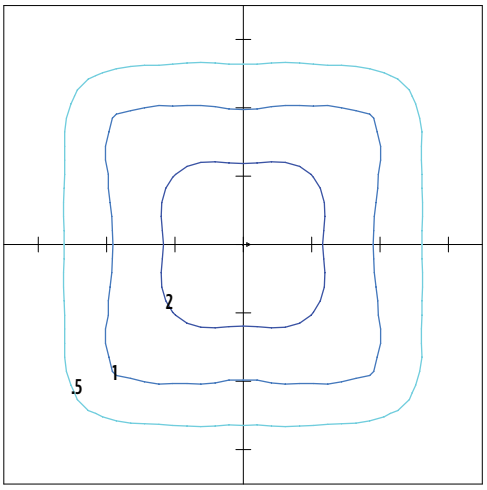
Back to Quick Links

MRM-LED-30L-SIL-5W-40-70CRI

Luminaire Data	
Type 5W Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	17,636
Watts	135
Efficacy	131
IES Type	Type VS - Short
BUG Rating	B4-U0-G2

Zonal Lumen Summary		
Zone	**Lumens**	**% Luminaire**
Low (0-30)°	1646	9%
Medium (30-60)°	7453	43%
High (60-80)°	8405	48%
Very High (80-90)°	132	1%
Uplight (90-180)°	0	0%
Total Flux	17636	100%

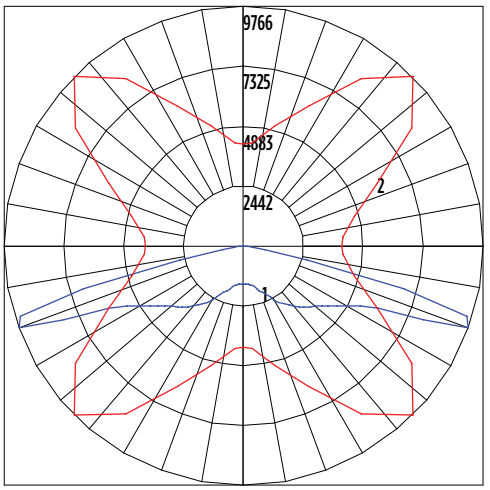
ISO Footcandle



20' Mounting Height / 20' Grid Spacing

5 FC 2 FC 1 FC 0.5 FC

Polar Curve



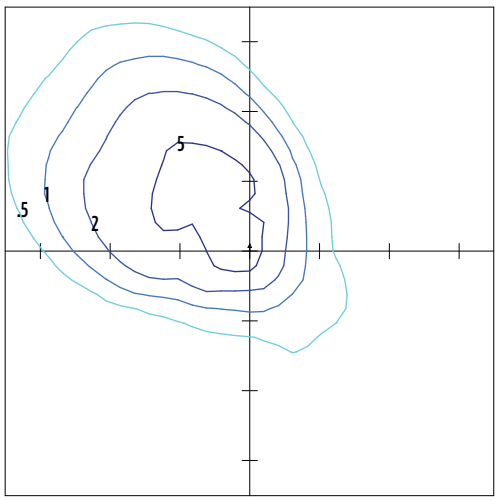
Vertical Plane Horizontal Cone

MRS-LED-18L-SIL-LC-40-70CRI

Luminaire Data	
Left Corner Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	18,258
Watts	135
Efficacy	135
IES Type	N/A
BUG Rating	B3-U0-G3

Zonal Lumen Summary		
Zone	**Lumens**	**% Luminaire**
Low (0-30)°	2412	13%
Medium (30-60)°	7504	41%
High (60-80)°	7698	42%
Very High (80-90)°	644	4%
Uplight (90-180)°	0	0%
Total Flux	18258	100%

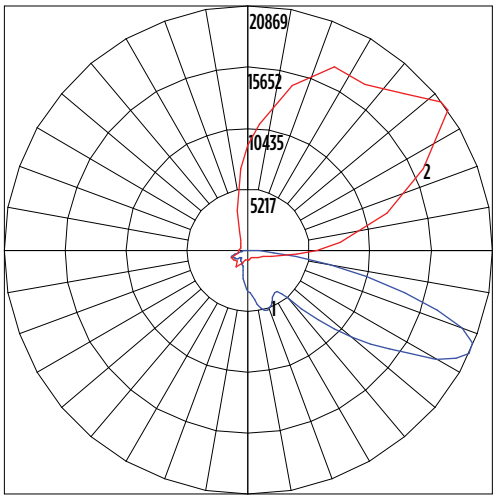
ISO Footcandle



20' Mounting Height / 20' Grid Spacing

5 FC 2 FC 1 FC 0.5 FC

Polar Curve



Vertical Plane Horizontal Cone

PHOTOMETRICS (CONT)

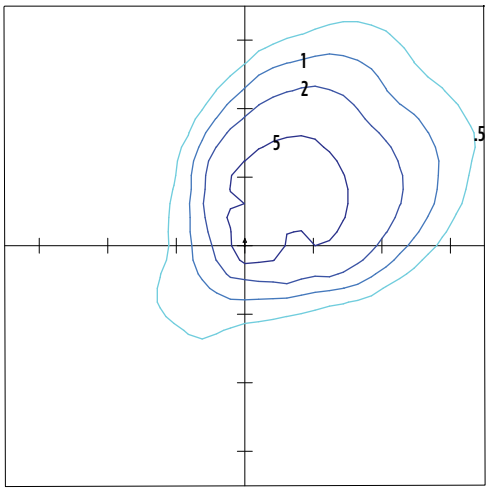
Back to Quick Links

MRM-LED-30L-SIL-5W-40-70CRI

Luminaire Data	
Right Corner Distribution	
Description	4000 Kelvin, 70 CRI
Delivered Lumens	18,138
Watts	135
Efficacy	134
IES Type	N/A
BUG Rating	B3-U0-G3

Zonal Lumen Summary		
Zone	**Lumens**	**% Luminaire**
Low (0-30)°	2317	13%
Medium (30-60)°	8066	44%
High (60-80)°	7214	40%
Very High (80-90)°	541	3%
Uplight (90-180)°	0	0%
Total Flux	18138	100%

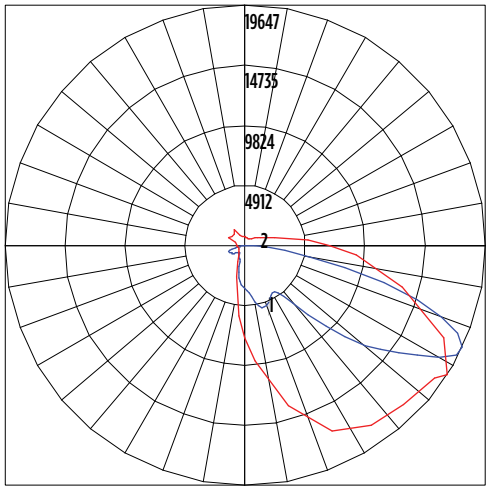
ISO Footcandle



20' Mounting Height / 20' Grid Spacing

5 FC 2 FC 1 FC 0.5 FC

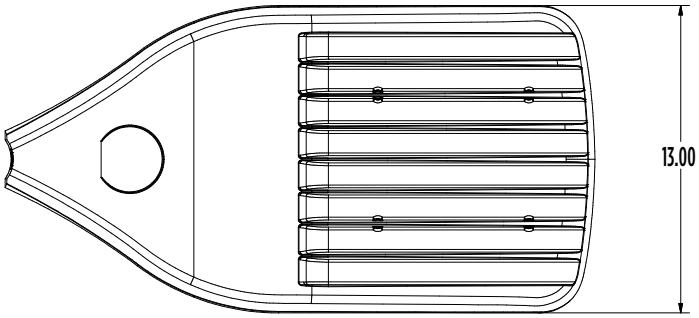
Polar Curve

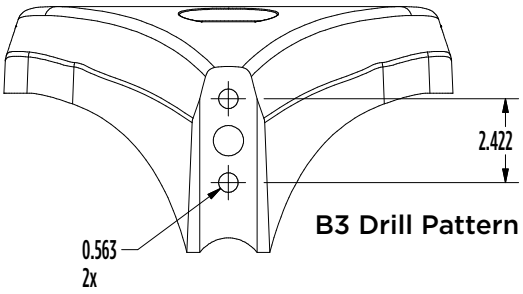


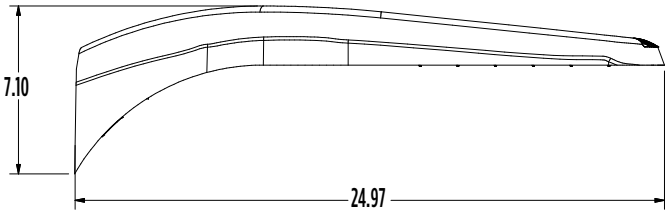
Vertical Plane Horizontal Cone

PRODUCT DIMENSIONS

Back to Quick Links







Luminaire EPA Chart					
Tilt Degree		**0°**	**15°**	**30°**	**45°**
	Single	0.5	0.8	1.3	1.8
	D180°	0.9	1.1	1.3	1.8
	D90°	0.9	1.3	1.8	2.2
	T90°	1.4	1.9	2.3	2.6
	TN120°	1.4	2.1	1.9	2.3
	Q90°	1.4	1.9	2.3	2.6

CONTROLS

Back to Quick Links

Integral Bluetooth™ Motion and Photocell Sensor (IMSBTxL)

Slim low profile sensor provides multi-level control based on motion and/or daylight. Sensor controls 0-10 VDC LED drivers and is IP66 rated for cold and wet locations (-40°F to 167°F). Two unique PIR lenses are available and used based on fixture mounting height. All control parameters are adjustable via an iOS or Android App capable of storing and transmitting sensor profiles.

Click here to learn more details about IMSBT

LEVITON App | Apple | Android

AirLink Blue (ALBCSx)

Wireless Bluetooth Mesh Outdoor Lighting Control System that provides energy savings, code compliance and enhanced safety/security for parking lots and parking garages. Three key components; Bluetooth wireless radio/sensor controller, Time Keeper and an iOS App. Capable of grouping multiple fixtures and sensors as well as scheduling time-based events by zone. Radio/Sensor Controller is factory integrated into Area/Site, Wall Mounted, Parking Garage and Canopy luminaires.

Click here to learn more details about AirLink Blue

AirLink Blue App | Apple

Sensor Sequence of Operations

Standard Programming	On Event	Off Event	On Light Level	Dim Light Level	Daylight Harvesting	Delay To Off	Sensitivity
IMSBTxL	Motion	No Motion	100%	N/A	On; Auto Calibration	20 minutes	High

Operation	Description
On Event	Trigger that activates lights to turn on; either automatic via motion detected or manually activated via push of button.
Off Event	Trigger that activates lights to turn off; either automatic via no motion detected or manually activated via push of button.
On Light Level	The light level that the fixtures will turn on to when ON EVENT occurs.
Dim Light Level	The light level that the fixtures will dim down to when no motion is detected.
Delay to Dim	The amount of time after which no motion is detected that the fixtures will be triggered to dim down. This sequence is optional, and sensor can be programmed to only trigger the fixture to turn off by entering 100% in this field.
Delay to Off	The amount of time after which no motion is detected that the fixtures will be triggered to turn off. If delay to dim is part of the programmed functionality, this is the amount of time after which no motion is detected after the fixture have already dimmed down.
Sensitivity	The sensitivity can be set to high, medium, low, or auto where applicable. High will detect smaller, simple motions. Low will only detect larger more complex motions. Auto temperature calibration adjusts the PIR sensitivity as ambient temperature rises to increase detection of heat movement through the field of view.

Catalog # : _____ Project : _____

Prepared By : _____ Date : _____

Steel Poles

Square Straight

QUICK LINKS

Ordering Guide | Configurations | Dimensions | EPA

FEATURES & SPECIFICATIONS

Pole Shaft

- Straight poles are 4”, 5”, or 6” square.
- Pole shaft is electro-welded ASTM-A500 Grade C steel tubing with a minimum yield strength of 50,000 psi.
- On Tenon Mount steel poles, tenon is 2-3/8” O.D. high-strength pipe. Tenon is 4-3/4” in length.

Hand-Hole

- Standard hand-hole location is 12” above pole base.
- Poles 22’ and above have a 3” x 6” reinforced hand-hole. Shorter poles have a 2” x 4” non-reinforced hand-hole.

Base

- Pole base is ASTM-A36 hot-rolled steel plate with a minimum yield strength of 36,000 psi.
- Two-piece square base cover is optional.

Anchor Bolts

- Poles are furnished with anchor bolts featuring zinc-plated double nuts and washers. Galvanized anchor bolts are optional.
- Anchor Bolts conform to ASTM F 1554-07a Grade 55 with a minimum yield strength of 55,000 PSI.

Ground Lug

- Ground lug is standard.

Duplex Receptacle

- Weatherproof duplex receptacle is optional.

Ground Fault Circuit Interrupter

- Self-testing Ground fault circuit interrupter is optional.

Finishes

- Every pole is provided with the DuraGrip Protection System and a 5-year limited warranty:
- When the top-of-the line DuraGrip Plus Protection System is selected, in addition to the DuraGrip Protection System, a non-porous, automotive-grade corrosion coating is applied to the lower portion of the pole interior sealing and further protecting it from corrosion. This option extends the limited warranty to 7 years.

Determining The Luminaire/Pole Combination For Your Application:

- Select luminaire from luminaire ordering information.
- Select bracket configuration if required
- Determine EPA value from luminaire/ bracket EPA chart
- Select Pole Height
- Select MPH to match wind speed in the application area (See windspeed maps).
- Confirm pole EPA equal to or exceeding value of luminaire/bracket EPA
- Consult factory for special wind load requirements and banner brackets.

Pole Vibration Damper

- A pole vibration damper is recommended in open terrain areas of the country where low steady state winds are common.
- Non-tapered poles and lightly loaded poles are more susceptible to destructive vibration if a damper is not installed.

Listings

- UL Listed
- BAA/TAA Compliant

Steel Poles - Square Straight

Type: _____

Have questions? Call us at (800) 436-7800

ORDERING GUIDE

Back to Quick Links

TYPICAL ORDER EXAMPLE: 4SQ B3 S11G 24 S PLP DGP

Pole Series	Mounting Method	Material	Height [2]	Mounting Configuration	Pole Finish	Options
4SQ - 4" x 4" Square Straight Pole (New Build) **5SQ** - 5" x 5" Square Straight Pole (New Build) **6SQ** - 6" x 6" Square Straight Pole (New Build) **4SQU** - 4" x 4" Square Straight Pole (Retrofit) **5SQU** - 5" x 5" Square Straight Pole (Retrofit) **6SQU** - 6" x 6" Square Straight Pole (Retrofit)	**Bolt-On Mount**[1] - See pole selection guide for patterns and fixture matches **B5** - 5" Traditional Drilling Pattern **B3** - 3" Reduced Drilling Pattern **B2** - 2" Reduced Drilling Pattern **T** - Tenon Mount - See pole selection guide for tenon and fixture/bracket matches **I** - No Mounting Holes[1] - Use with: BKA-IFM4 - Flush Mount Adapter[7] Greenlee Lifestyle CH Mounting Style Enterprise, Lexington, Constitution PT Single Mounting[2]	**S11G** – 11 Ga. Steel (4SQ/4SQU and 5SQ/5SQU Only) **S07G** – 07 Ga. Steel	**8'** **10'** **12'** **13'** **14'** **15'** **16'** **17'** **17'6"** **18'** **20'** **22'** **22'6"** **23'** **24'** **25'** **26'** **27'** **28'** **30'** **32'** **35'** **39'**	**S** – Single/Parallel **D180** – Double **D90** – Double **DN90** – Double **T90** – Triple **TN120** – Triple **Q90** – Quad **QN90** – Quad **N** – Tenon Mount (Standard Tenon size is 2-3/8" O.D.)[8]	**BRZ** – Bronze **BLK** – Black **PLP** – Platinum Plus **WHT** – White **SVG** – Satin Verde Green **GPT** – Graphite **MSV** – Metallic Silver **BZA** – Alternate Bronze	**GA** – Galvanized Anchor Bolts **SF** – Single Flood[3] **DF** – Double Flood [3] **DGP** – DuraGrip® Plus **LAB** – Less Anchor Bolts **CRXX** - Conduit Raceway[4]

Need more information?
Click here for our glossary

Have additional questions?
Call us at (800) 436-7800

Accessory Ordering Information

DESCRIPTION	PART NUMBER
4BC – 4" Square Base Cover	122559CLR
5BC – 5" Square Base Cover	122561CLR
6BC – 6" Square Base Cover	122563CLR
5BC - 5' Square Universal Base Cover	132488CLR
6BC - 6' Square Universal Base Cover	131252CLR
ER2 – Weatherproof Duplex Receptacle	122566CLR
GFI – Ground Fault Circuit Interrupter	122567CLR
MH5 - mounting Hole Plugs for use with 5" traditional drill pattern (3 set of 3 plugs)	132336
MH3 - mounting Hole Plugs for use with 3" reduced drill pattern (3 set of 3 plugs)	681126
MH2 - Mounting Hole Plugs for use with 2" reduced drill pattern (3 sets of 3 plugs)	725841
Vibration Damper - 4" Square Pole (bolt-on mount only)	172539
Vibration Damper - 5" Square Pole (bolt-on mount only)	172538
Vibration Damper - 6" Square Pole (bolt-on mount only)	178361

FOOTNOTES:
1 - See Area Light Brackets - 3" Reduced Drill Pattern and Area Light Brackets - 5" Traditional Drill Pattern Spec Sheets.
2 - Pole heights will have +/- 1/2" tolerance.
3 - See Flood Lighting Brackets section for choice of FBO brackets.
4 - CR selection must indicate required height and side of pole mounting location. Mounting template required at time of order.

Steel Poles - Square Straight

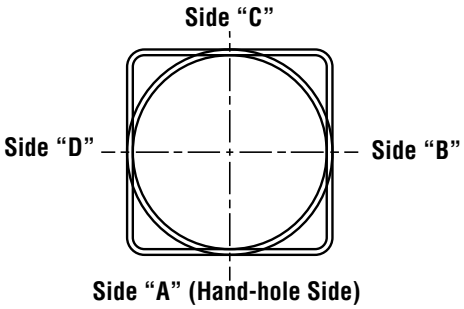
Type: _____

Have questions? Call us at (800) 436-7800

DRILLING LOCATIONS

Back to Quick Links

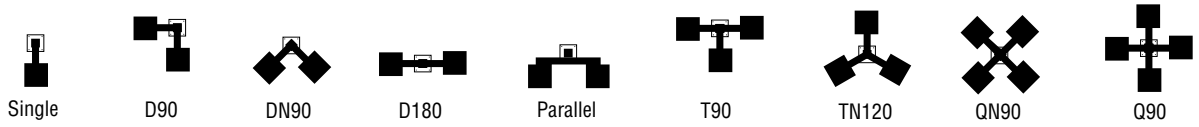
Sides	A	B	C	D
Hand-hole	X			
Single	X			
D180		X		X
D90	X			X
DN90[1]				
T90	X	X		X
TN120[2]				
Q90	X	X	X	X
QN90[3]				
Single FBO	X			
Double FBO		X		X



NOTES:
1 - Two locations will be 45° to the left and right of Side A.
2 - Other two locations will be 120° to the left and right of Side A.
3 - Two locations will be 45° to the left and right of Side A and two locations will be 135° to the left and right of Side A.

Consult factory for custom variations. Standard SF and DF pole preparations are located 3/4 of the height of the pole from the base, except on 20’ poles. Maximum height for SF and DF pole preparations on 20’ poles is 13’ from the base.

FIXTURE CONFIGURATIONS



Steel Poles - Square Straight

Type: _____

Have questions? Call us at (800) 436-7800

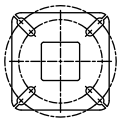
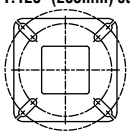
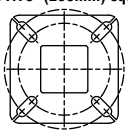
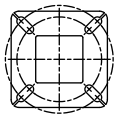
BOLT CIRCLE

STANDARD BASEPLATE

	4" (102mm) square 10-1/8" (257mm) sq.	**5" (127mm) square 10-1/8" (257mm) sq.**	**5" (127mm) square 10-1/8" (257mm) sq.**	**6" (152mm) square 12" (305mm) sq.**
	 **11" (279mm) Dia. Bolt Circle**	 **11" (279mm) Dia. Bolt Circle**	 **11" (279mm) Dia. Bolt Circle**	 **12" (305mm) Dia. Bolt Circle**
Bolt Circle Designator	B	C	D	J
Bolt Circle	Slotted 8"-11" (203mm-279mm)	Slotted 9"-11" (229mm-279mm)	Slotted 9"-11" (229mm-279mm)	Slotted 12" (305mm)
Anchor Bolt Size	3/4" x 30" (19mm x 762mm)	3/4" x 30" (19mm x 762mm)	1" x 36" (25mm x 914mm)	1" x 36" (25mm x 914mm)
Anchor Bolt Projection	3-1/4" (83mm)	3-1/4" (83mm)	4" (102mm)	4" (102mm)
Base Plate Opening for Wireway Entry	3-5/8" (92mm)	4-3/4" (121mm)	4-5/8" (117mm)	5-5/8" (143mm)
Base Plate Dimensions	10-1/8" sq. x 3/4" thk. (257mm x 19mm)	10-1/8" sq. x 3/4" thk. (257mm x 19mm)	10-1/8" sq. x 1" thk. (257mm x 25mm)	12" sq. x 1-1/8" thk. (305mm x 29mm)
Pole Gauge	11	11	7	7

Note: Base plate illustrations may change without notice. Do not use for setting anchor bolts. Consult factory for the appropriate anchor bolt template.

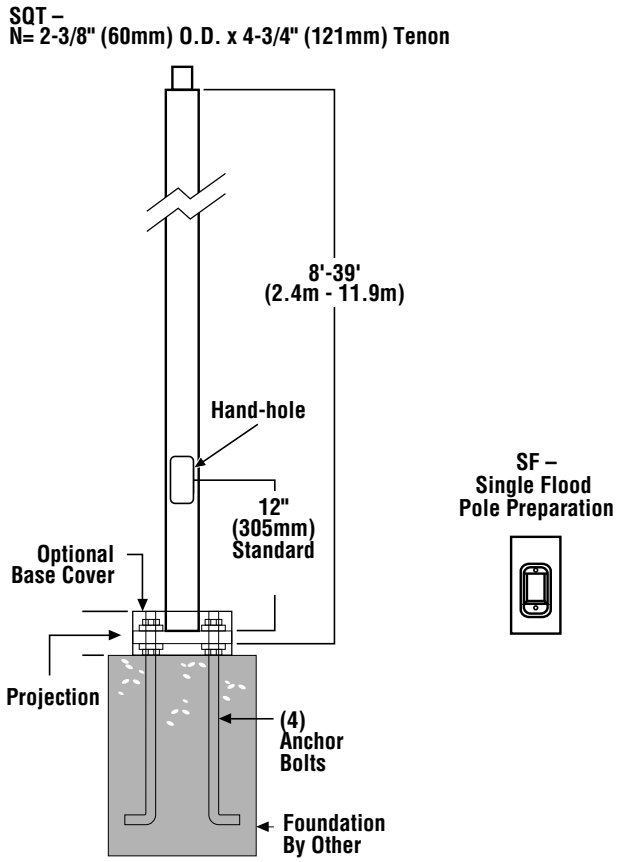
UNIVERSAL BASEPLATE

	4" (102mm) square 10.5" (267mm) sq.	**5" (127mm) square 11.125" (283mm) sq.**	**5" (127mm) square 11.75" (298mm) sq.**	**6" (152mm) square 12-1/2" (318mm) sq.**
	 **4SQ**	 **5SQ**	 **5SQ**	 **14" (356mm) Dia. Bolt Circle**
Bolt Circle Designator	E	F	G	H
Bolt Circle	Slotted 9"-12"	Slotted 10-13"	Slotted 10-13"	Slotted 11"-14" (279mm-356mm)
Anchor Bolt Size	3/4" x 30" (19mm x 762 mm)	3/4x 30" (25mm x 914 mm)	1x 36" (25mm x 914 mm)	1" x 36" (25mm x 914mm)
Anchor Bolt Projection	3-1/4" (83 mm)	3-1/4" (83 mm)	4" (102 mm)	4" (102mm)
Base Plate Opening for Wireway Entry	3-5/8" (92mm)	4-3/4" (121mm)	5-1/8" (130 mm)	5-5/8" (143mm)
Base Plate Dimensions	10-1/2" sq. x 3/4" thk. (267 mm x 19 mm)	11-1/8 sq. x 3/4" thk. (283 mm x 19 mm)	11-3/4" sq. x 1" thk. (298 mm x 25 mm)	12 1/2" sq. x 1 1/8" thk. (318mm x 29mm)
Pole Gauge	11	11	7	7

Note: Base plate illustrations may change without notice. Do not use for setting anchor bolts. Consult factory for the appropriate anchor bolt template.

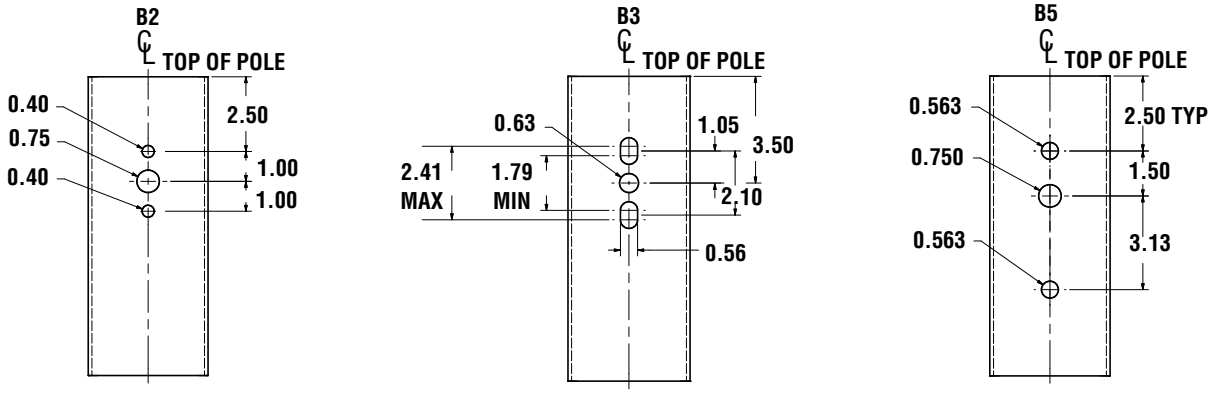
PRODUCT DIMENSIONS

Back to Quick Links



SHIPPING WEIGHTS	
4"(102mm) sq. 11 Ga. is approximately	7.50 lbs./ft.
4"(102mm) sq. 07 Ga. is approximately	10.00 lbs./ft.
5"(127mm) sq. 11 Ga. is approximately	9.00 lbs./ft.
5"(127mm) sq. 07 Ga. is approximately	12.50 lbs./ft.
6"(152mm) sq. 07 Ga. is approximately	15.40 lbs./ft.
Anchor Bolts (3/4" x 30")(19mm x 762mm)	15 lbs. (7kg)/set
Anchor Bolts (1" x 36")(25mm x 914mm)	30 lbs. (14kg)/set

Bolt-On Mount 2-Bolt Pattern



Steel Poles - Square Straight

Type: _____

Have questions? Call us at (800) 436-7800

WIND SPEED

Back to Quick Links

EPA Information
All LSI Industries' poles are guaranteed to meet the EPA requirements listed. LSI Industries is not responsible if a pole order has a lower EPA rating than the indicated wind-loading zone where the pole will be located.
CAUTION: This guarantee does not apply if the pole/bracket/fixture combination is used to support any other items such as flags, pennants, or signs, which would add stress to the pole. LSI Industries cannot accept responsibility for harm or damage caused in these situations.

NOTE: Pole calculations include a 1.3 gust factor over steady wind velocity. Example: poles designed to withstand 80 MPH steady wind will withstand gusts to 104 MPH. EPAs are for locations 100 miles away from hurricane ocean lines. Consult LSI for other areas. Note: Hurricane ocean lines are the Atlantic and Gulf of Mexico coastal areas. For applications in Florida or Canada, consult factory.

Use ONLY with "Wind Speed Map for ASCE 7-10

POLE[1]	Mtg. Height Length (ft)	Wall Thick (ga)	BOLT CIRCLE			EPA								
			Designator	Dia. (in)	Anchor bolt Dia {in}	110 MPH	115 MPH	120 MPH	130 MPH	140 MPH	150 MPH	160 MPH	170 MPH	180 MPH
4" x 11-ga x 12'	12	11	B	8" - 11"	0.75	13.9	12.5	11.3	9.2	7.6	6.3	5.2	4.3	3.6
4" x 11-ga x 14'	14	11	B	8" - 11"	0.75	10.7	9.5	8.5	6.8	5.4	4.4	3.5	2.7	2.1
4" x 11-ga x 16'	16	11	B	8" - 11"	0.75	8.2	7.2	6.4	4.9	3.8	2.9	2.1	1.5	1.0
4" x 11-ga x 18'	18	11	B	8" - 11"	0.75	6.3	5.4	4.7	3.4	2.4	1.6	1.0	0.4	n/a
4" x 11-ga x 20'	20	11	B	8" - 11"	0.75	4.6	3.9	3.2	2.1	1.2	0.6	n/a	n/a	n/a
4" x 11-ga x 22'	22	11	B	8" - 11"	0.75	7.6	6.6	5.7	4.2	3.0	2.0	1.2	0.5	n/a
4" x 11-ga x 24'	24	11	B	8" - 11"	0.75	6.0	5.1	4.3	2.9	1.8	0.9	n/a	n/a	n/a
4" x 11-ga x 26'	26	11	B	8" - 11"	0.75	4.6	3.7	3.0	1.7	0.7	n/a	n/a	n/a	n/a
4" x 7-ga x 14'	14	7	B	8" - 11"	0.75	18.3	16.4	14.9	12.2	10.2	8.5	7.1	5.9	5.0
4" x 7-ga x 16'	16	7	B	8" - 11"	0.75	14.7	13.2	11.8	9.6	7.8	6.3	5.2	4.2	3.4
4" x 7-ga x 18'	18	7	B	8" - 11"	0.75	11.9	10.5	9.3	7.4	5.9	4.6	3.6	2.8	2.1
4" x 7-ga x 20'	20	7	B	8" - 11"	0.75	9.6	8.4	7.4	5.7	4.3	3.2	2.3	1.6	0.9
4" x 7-ga x 22'	22	7	B	8" - 11"	0.75	7.7	6.6	5.7	4.2	3.0	2.0	1.2	0.5	n/a
4" x 7-ga x 24'	24	7	B	8" - 11"	0.75	6.0	5.1	4.3	2.9	1.8	0.9	n/a	n/a	n/a
4" x 7-ga x 26'	26	7	B	8" - 11"	0.75	4.6	3.7	3.0	1.7	0.7	n/a	n/a	n/a	n/a
4" x 7-ga x 28'[2]	28	7	B	8" - 11"	0.75	3.3	2.5	1.8	0.7	n/a	n/a	n/a	n/a	n/a
4" x 7-ga x 30'[2]	30	7	B	8" - 11"	0.75	2.2	1.4	0.8	n/a	n/a	n/a	n/a	n/a	n/a
5" x 11-ga x 14'	14	11	C	9" - 11"	0.75	17.4	15.7	14.1	11.5	9.3	7.7	6.3	5.2	4.2
5" x 11-ga x 16'	16	11	C	9" - 11"	0.75	13.8	12.3	10.9	8.7	6.9	5.5	4.3	3.3	2.5
5" x 11-ga x 18'	18	11	C	9" - 11"	0.75	10.8	9.6	8.4	6.5	4.9	3.7	2.6	1.8	1.1
5" x 11-ga x 20'	20	11	C	9" - 11"	0.75	8.5	7.3	6.3	4.6	3.2	2.1	1.2	0.5	n/a
5" x 11-ga x 22'	22	11	C	9" - 11"	0.75	10.9	9.5	8.3	6.2	4.5	3.2	2.1	1.2	0.5
5" x 11-ga x 24'	24	11	C	9" - 11"	0.75	8.8	7.5	6.4	4.5	3.0	1.8	0.8	n/a	n/a
5" x 11-ga x 26'	26	11	C	9" - 11"	0.75	6.8	5.7	4.6	3.0	1.6	0.6	n/a	n/a	n/a
5" x 11-ga x 28'	28	11	C	9" - 11"	0.75	5.2	4.1	3.2	1.6	0.4	n/a	n/a	n/a	n/a
5" x 11-ga x 30'	30	11	C	9" - 11"	0.75	3.6	2.7	1.8	0.4	n/a	n/a	n/a	n/a	n/a
5" x 7-ga x 20'	20	7	D	9" - 11"	1.00	21.6	19.3	17.3	14.0	11.3	9.2	7.4	6.0	4.8
5" x 7-ga x 22'	22	7	D	9" - 11"	1.00	20.7	18.6	16.6	13.3	10.7	8.5	6.8	5.4	4.2
5" x 7-ga x 24'	24	7	D	9" - 11"	1.00	17.7	15.6	13.8	10.8	8.5	6.6	5.0	3.7	2.6
5" x 7-ga x 26'	26	7	D	9" - 11"	1.00	14.9	13.1	11.4	8.8	6.6	4.9	3.5	2.3	1.3
5" x 7-ga x 28'	28	7	D	9" - 11"	1.00	12.5	10.9	9.4	6.9	4.9	3.4	2.1	1.0	n/a
5" x 7-ga x 30'	30	7	D	9" - 11"	1.00	10.3	8.9	7.5	5.2	3.4	2.0	0.8	n/a	n/a
5" x 7-ga x 35'	35	7	D	9" - 11"	1.00	6.0	4.8	3.6	1.8	n/a	n/a	n/a	n/a	n/a
6" x 7-ga x 24'	24	7	J	12"	1.00	18.6	16.4	14.3	11.2	8.6	6.5	4.8	3.4	2.2
6" x 7-ga x 26'	26	7	J	12"	1.00	15.6	13.4	11.7	8.8	6.5	4.6	3.0	1.8	0.7
6" x 7-ga x 28'	28	7	J	12"	1.00	12.9	10.9	9.3	6.7	4.6	2.8	1.5	n/a	n/a
6" x 7-ga x 30'	30	7	J	12"	1.00	10.4	8.8	7.3	4.8	2.9	1.3	n/a	n/a	n/a
6" x 7-ga x 32'	32	7	J	12"	1.00	8.3	6.8	5.5	3.1	1.3	n/a	n/a	n/a	n/a
6" x 7-ga x 34'	34	7	J	12"	1.00	6.5	5.0	3.7	1.6	n/a	n/a	n/a	n/a	n/a
6" x 7-ga x 35'	35	7	J	12"	1.00	5.5	4.2	2.9	0.9	n/a	n/a	n/a	n/a	n/a
6" x 7-ga x 39'	39	7	J	12"	1.00	2.3	1.0	n/a	n/a	n/a	n/a	n/a	n/a	n/a

All LSI Industries' poles are guaranteed to meet the EPA requirements listed. LSI Industries is not responsible if a pole order has a lower EPA rating than the indicated wind-loading zone where the pole will be located.
CAUTION: This guarantee does not apply if the pole/bracket/fixture combination is used to support any other items such as flags, pennants, or signs, which would add stress to the pole. LSI Industries cannot accept responsibility for harm or damage caused in these situations.

Note:
1- Poles shorter than these listed here in for each gauge have EPA rating equal to or greater than what is provided in this table. To Confirm EPA ratings on shorter poles, contact LSI Industries.
2- LSI Industries recommends a vibration damper be ordered with this length.

Steel Poles - Square Straight

Type: _____

Have questions? Call us at (800) 436-7800

WIND SPEED

POLE[1]	Mtg. Height Length (ft)	Wall Thick (ga)	BOLT CIRCLE			EPA								
			Designator	Dia. (in)	Anchor bolt Dia (in)	110 MPH	115 MPH	120 MPH	130 MPH	140 MPH	150 MPH	160 MPH	170 MPH	180 MPH
5" x 11-ga x 14'	14	11	F	11"	0.75	17.6	15.8	14.2	11.5	9.4	7.7	6.3	5.2	4.3
5" x 11-ga x 14'	14	11	F	13"	0.75	17.6	15.8	14.2	11.5	9.4	7.7	6.3	5.2	4.3
5" x 11-ga x 16'	16	11	F	11"	0.75	13.9	12.2	11.0	8.8	7.0	5.5	4.3	3.4	2.5
5" x 11-ga x 16'	16	11	F	13"	0.75	13.9	12.2	11.0	8.8	7.0	5.5	4.3	3.4	2.5
5" x 11-ga x 18'	18	11	F	11"	0.75	11.0	9.6	8.4	6.5	5.0	3.7	2.7	1.8	1.1
5" x 11-ga x 18'	18	11	F	13"	0.75	11.0	9.6	8.4	6.5	5.0	3.7	2.7	1.8	1.1
5" x 11-ga x 20'	20	11	F	11"	0.75	8.6	7.4	6.4	4.6	3.3	2.2	1.3	0.5	-
5" x 11-ga x 20'	20	11	F	13"	0.75	8.6	7.4	6.4	4.6	3.3	2.2	1.3	0.5	-
5" x 11-ga x 22'	22	11	F	11"	0.75	12.7	11.1	9.6	7.4	5.6	4.1	3.0	2.0	1.1
5" x 11-ga x 22'	22	11	F	12"	0.75	10.3	8.9	7.7	5.7	4.1	2.8	1.8	0.9	-
5" x 11-ga x 22'	22	11	F	13"	0.75	8.6	7.4	6.4	4.6	3.1	2.0	1.1	-	-
5" x 11-ga x 24'	24	11	F	11"	0.75	10.2	8.9	7.6	5.6	4.0	2.6	1.6	0.7	-
5" x 11-ga x 24'	24	11	F	12"	0.75	8.0	6.9	5.8	4.0	2.6	1.5	0.5	-	-
5" x 11-ga x 24'	24	11	F	13"	0.75	6.7	5.5	4.6	3.0	1.7	0.7	-	-	-
5" x 11-ga x 26'	26	11	F	11"	0.75	8.1	6.9	5.8	4.0	2.5	1.3	-	-	-
5" x 11-ga x 26'	26	11	F	12"	0.75	6.2	5.1	4.1	2.6	1.3	-	-	-	-
5" x 11-ga x 26'	26	11	F	13"	0.75	5.0	4.0	3.1	1.6	0.5	-	-	-	-
5" x 11-ga x 28'	28	11	F	11"	0.75	6.3	5.2	4.3	2.5	1.1	-	-	-	-
5" x 11-ga x 28'	28	11	F	12"	0.75	4.6	3.6	2.7	1.2	-	-	-	-	-
5" x 11-ga x 28'	28	11	F	13"	0.75	3.4	2.5	1.7	-	-	-	-	-	-
5" x 11-ga x 30'	30	11	F	11"	0.75	4.7	3.7	2.8	1.2	-	-	-	-	-
5" x 11-ga x 30'	30	11	F	12"	0.75	3.1	2.2	1.4	-	-	-	-	-	-
5" x 11-ga x 30'	30	11	F	13"	0.75	2.0	1.2	0.5	-	-	-	-	-	-
5" x 7-ga x 20'	20	7	G	11"	0.75	19.0	17.0	15.0	12.2	9.7	7.8	6.2	5.0	3.8
5" x 7-ga x 20'	20	7	G	12"	0.75	21.4	19.1	17.1	13.8	11.2	9.1	7.3	5.9	4.7
5" x 7-ga x 20'	20	7	G	13"	0.75	21.4	19.2	17.2	13.9	11.3	9.2	7.4	6.0	4.8
5" x 7-ga x 20'	20	7	G	11"	1	21.7	19.4	17.4	14.0	11.4	9.3	7.5	6.0	4.8
5" x 7-ga x 20'	20	7	G	13"	1	21.7	19.4	17.4	14.0	11.4	9.3	7.5	6.0	4.8
5" x 7-ga x 22'	22	7	G	11"	0.75	16.0	14.1	12.5	9.8	7.6	5.9	4.4	3.3	2.3
5" x 7-ga x 22'	22	7	G	12"	0.75	17.7	15.9	14.2	11.2	8.7	7.0	5.4	4.1	3.0
5" x 7-ga x 22'	22	7	G	13"	0.75	19.9	17.3	15.6	12.6	10.0	8.0	6.3	5.0	3.8
5" x 7-ga x 22'	22	7	G	11"	1	21.0	18.7	16.7	13.4	10.6	8.5	6.8	5.4	4.2
5" x 7-ga x 22'	22	7	G	12"	1	23.4	20.6	18.4	15.0	12.2	9.9	8.0	6.4	5.1
5" x 7-ga x 22'	22	7	G	13"	1	21.3	18.8	17.0	13.7	11.0	8.8	7.0	5.6	4.3
5" x 7-ga x 24'	24	7	G	11"	0.75	13.3	11.6	10.0	7.7	5.7	4.2	2.9	1.9	1.0
5" x 7-ga x 24'	24	7	G	12"	0.75	15.0	13.0	11.6	8.9	6.8	5.1	3.8	2.6	1.7
5" x 7-ga x 24'	24	7	G	13"	0.75	16.6	14.6	12.9	10.2	8.0	6.1	4.6	3.3	2.3
5" x 7-ga x 24'	24	7	G	11"	1	17.5	15.7	13.9	10.9	8.6	6.7	5.0	3.7	2.7
5" x 7-ga x 24'	24	7	G	12"	1	20.0	17.4	15.4	12.3	9.9	7.8	6.0	4.7	3.5
5" x 7-ga x 24'	24	7	G	13"	1	18.1	16.0	14.2	11.0	8.7	6.7	5.3	3.9	2.8
5" x 7-ga x 26'	26	7	G	11"	0.75	10.9	9.3	8.0	5.9	4.1	2.7	1.6	0.6	-
5" x 7-ga x 26'	26	7	G	12"	0.75	12.4	10.9	9.5	7.0	5.1	3.6	2.3	1.3	-
5" x 7-ga x 26'	26	7	G	13"	0.75	14.0	12.3	10.7	8.1	6.0	4.4	3.1	2.0	1.0
5" x 7-ga x 26'	26	7	G	11"	1	15.0	13.2	11.5	8.8	6.7	4.9	3.5	2.3	1.3

Steel Poles - Square Straight

Type: _____

Have questions? Call us at (800) 436-7800

WIND SPEED

POLE[1]	Mtg. Height Length (ft)	Wall Thick (ga)	BOLT CIRCLE			EPA								
			Designator	Dia. (in)	Anchor bolt Dia {in}	110 MPH	115 MPH	120 MPH	130 MPH	140 MPH	150 MPH	160 MPH	170 MPH	180 MPH
5" x 7-ga x 26'	26	7	G	12"	1	17.0	14.8	13.0	10.2	7.9	6.0	4.4	3.1	2.1
5" x 7-ga x 26'	26	7	G	13"	1	15.3	13.5	11.8	9.0	6.8	5.0	3.6	2.5	1.4
5" x 7-ga x 28'	28	7	G	11"	0.75	8.9	7.4	6.3	4.3	2.7	1.4	-	-	-
5" x 7-ga x 28'	28	7	G	12"	0.75	10.2	8.8	7.5	5.3	3.5	2.1	1.0	-	-
5" x 7-ga x 28'	28	7	G	13"	0.75	11.8	10.2	8.8	6.4	4.5	3.0	1.7	0.7	-
5" x 7-ga x 28'	28	7	G	11"	1	12.5	10.9	9.5	7.0	5.0	3.3	2.1	1.0	-
5" x 7-ga x 28'	28	7	G	12"	1	14.2	12.4	11.0	8.2	6.0	4.3	3.0	1.7	0.8
5" x 7-ga x 28'	28	7	G	13"	1	12.9	11.0	9.7	7.2	5.2	3.6	2.2	1.1	-
5" x 7-ga x 30'	30	7	G	11"	0.75	7.0	5.8	4.7	2.8	1.3	-	-	-	-
5" x 7-ga x 30'	30	7	G	12"	0.75	8.4	7.0	5.8	3.8	2.2	0.9	-	-	-
5" x 7-ga x 30'	30	7	G	13"	0.75	9.7	8.2	7.0	4.8	3.0	1.6	0.5	-	-
5" x 7-ga x 30'	30	7	G	11"	1	10.4	8.8	7.6	5.3	3.4	2.0	0.8	-	-
5" x 7-ga x 30'	30	7	G	12"	1	12.0	10.3	9.0	6.4	4.4	2.9	1.6	0.5	-
5" x 7-ga x 30'	30	7	G	13"	1	10.6	9.1	7.7	5.5	3.6	2.1	1.0	-	-
5" x 7-ga x 35'	35	7	G	11"	0.75	3.2	2.2	1.2	-	-	-	-	-	-
5" x 7-ga x 35'	35	7	G	12"	0.75	4.4	3.2	2.2	0.5	-	-	-	-	-
5" x 7-ga x 35'	35	7	G	13"	0.75	5.5	4.2	3.1	1.3	-	-	-	-	-
5" x 7-ga x 35'	35	7	G	11"	1	6.0	4.8	3.6	1.8	-	-	-	-	-
5" x 7-ga x 35'	35	7	G	12"	1	7.3	6.0	4.8	2.7	1.1	-	-	-	-
5" x 7-ga x 35'	35	7	G	13"	1	6.3	5.0	3.8	1.9	-	-	-	-	-
6" x 7-ga x 24'	24	7	H	11"	1	16.5	14.4	12.6	9.6	7.2	5.3	3.8	2.5	1.4
6" x 7-ga x 24'	24	7	H	12-1/2"	1	19.8	17.5	15.4	12.0	9.2	7.0	5.3	3.8	2.7
6" x 7-ga x 24'	24	7	H	14"	1	23.0	20.5	18.0	14.3	11.2	8.9	6.9	5.3	3.8
6" x 7-ga x 26'	26	7	H	11"	1	13.7	11.8	10.2	7.5	5.3	3.6	2.1	1.0	-
6" x 7-ga x 26'	26	7	H	12-1/2"	1	16.5	14.6	12.6	9.6	7.0	5.2	3.6	2.2	1.1
6" x 7-ga x 26'	26	7	H	14"	1	19.6	17.3	15.2	11.7	8.9	6.7	5.0	3.5	2.2
6" x 7-ga x 28'	28	7	H	11"	1	11.0	9.3	7.8	5.5	3.5	1.9	0.6	-	-
6" x 7-ga x 28'	28	7	H	12-1/2"	1	13.8	12.0	10.2	7.5	5.2	3.4	1.9	0.7	-
6" x 7-ga x 28'	28	7	H	14"	1	16.4	14.5	12.5	9.4	6.9	4.7	3.2	1.8	0.7
6" x 7-ga x 30'	30	7	H	11"	1	9.0	7.3	6.0	3.6	1.9	0.5	-	-	-
6" x 7-ga x 30'	30	7	H	12-1/2"	1	11.4	9.6	8.0	5.5	3.4	1.7	-	-	-
6" x 7-ga x 30'	30	7	H	14"	1	14.0	12.0	10.0	7.2	5.0	3.2	1.6	-	-
6" x 7-ga x 32'	32	7	H	11"	1	7.0	5.5	4.2	2.0	-	-	-	-	-
6" x 7-ga x 32'	32	7	H	12-1/2"	1	9.2	7.6	6.0	3.8	1.8	-	-	-	-
6" x 7-ga x 32'	32	7	H	14"	1	11.4	9.7	8.0	5.4	3.2	1.6	-	-	-
6" x 7-ga x 34'	34	7	H	11"	1	5.1	3.7	2.5	0.6	-	-	-	-	-
6" x 7-ga x 34'	34	7	H	12-1/2"	1	7.2	5.6	4.4	2.2	-	-	-	-	-
6" x 7-ga x 34'	34	7	H	14"	1	9.3	7.6	6.2	3.6	1.7	-	-	-	-
6" x 7-ga x 35'	35	7	H	11"	1	4.2	3.0	1.8	-	-	-	-	-	-
6" x 7-ga x 35'	35	7	H	12-1/2"	1	6.2	4.8	3.6	1.4	-	-	-	-	-
6" x 7-ga x 35'	35	7	H	14"	1	8.2	6.6	5.2	2.9	1.0	-	-	-	-
6" x 7-ga x 39'	39	7	H	11"	1	1.0	-	-	-	-	-	-	-	-
6" x 7-ga x 39'	39	7	H	12-1/2"	1	3.0	1.6	0.5	-	-	-	-	-	-
6" x 7-ga x 39'	39	7	H	14"	1	4.6	3.3	2.0	-	-	-	-	-	-

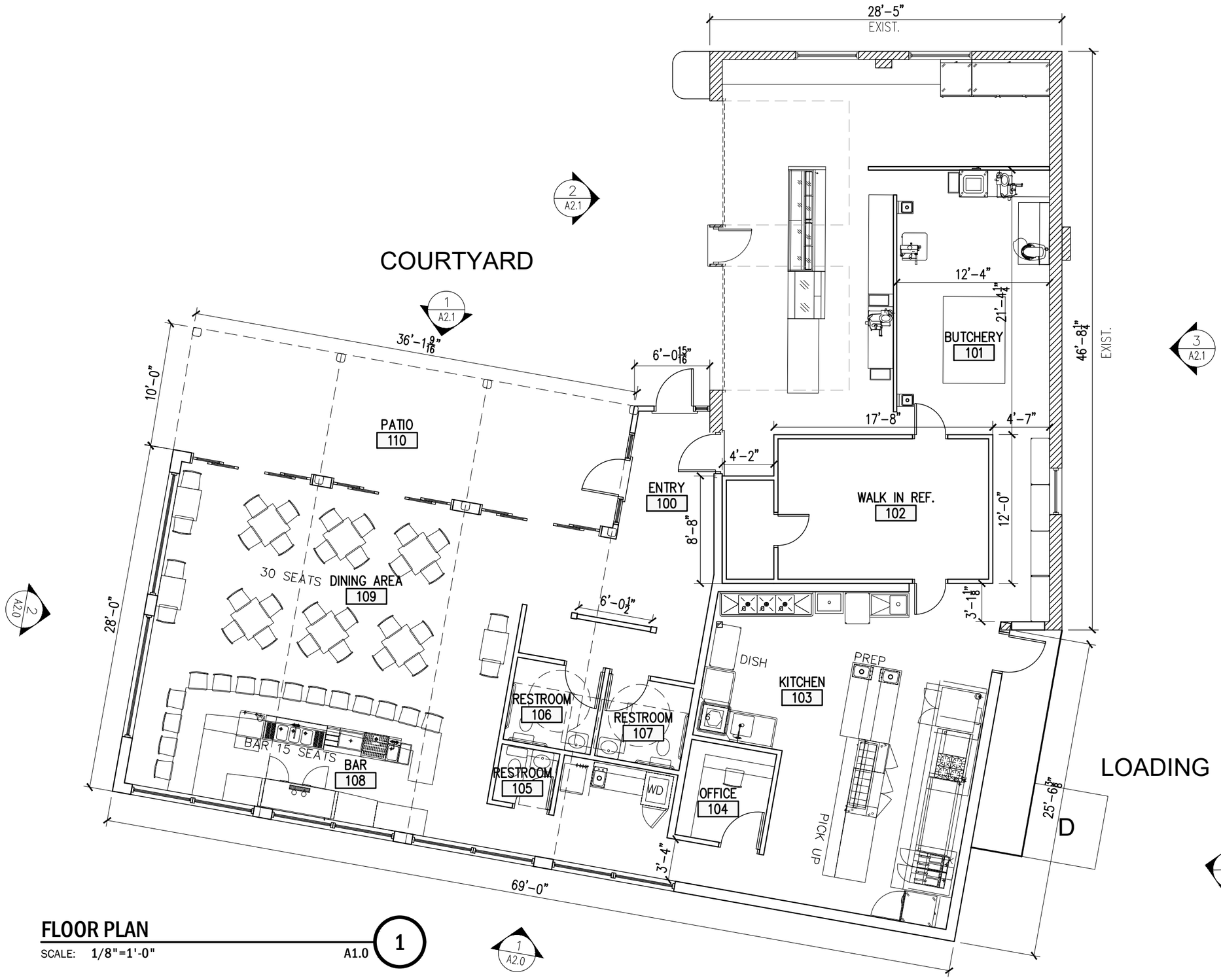
All LSI Industries' poles are guaranteed to meet the EPA requirements listed. LSI Industries is not responsible if a pole order has a lower EPA rating than the indicated wind-loading zone where the pole will be located.

CAUTION: This guarantee does not apply if the pole/bracket/fixture combination is used to support any other items such as flags, pennants, or signs, which would add stress to the pole. LSI Industries cannot accept responsibility for harm or damage caused in these situations.

Note:

1- Poles shorter than these listed here in for each gauge have EPA rating equal to or greater than what is provided in this table. To Confirm EPA ratings on shorter poles, contact LSI Industries.

2- LSI Industries recommends a vibration damper be ordered with this length.



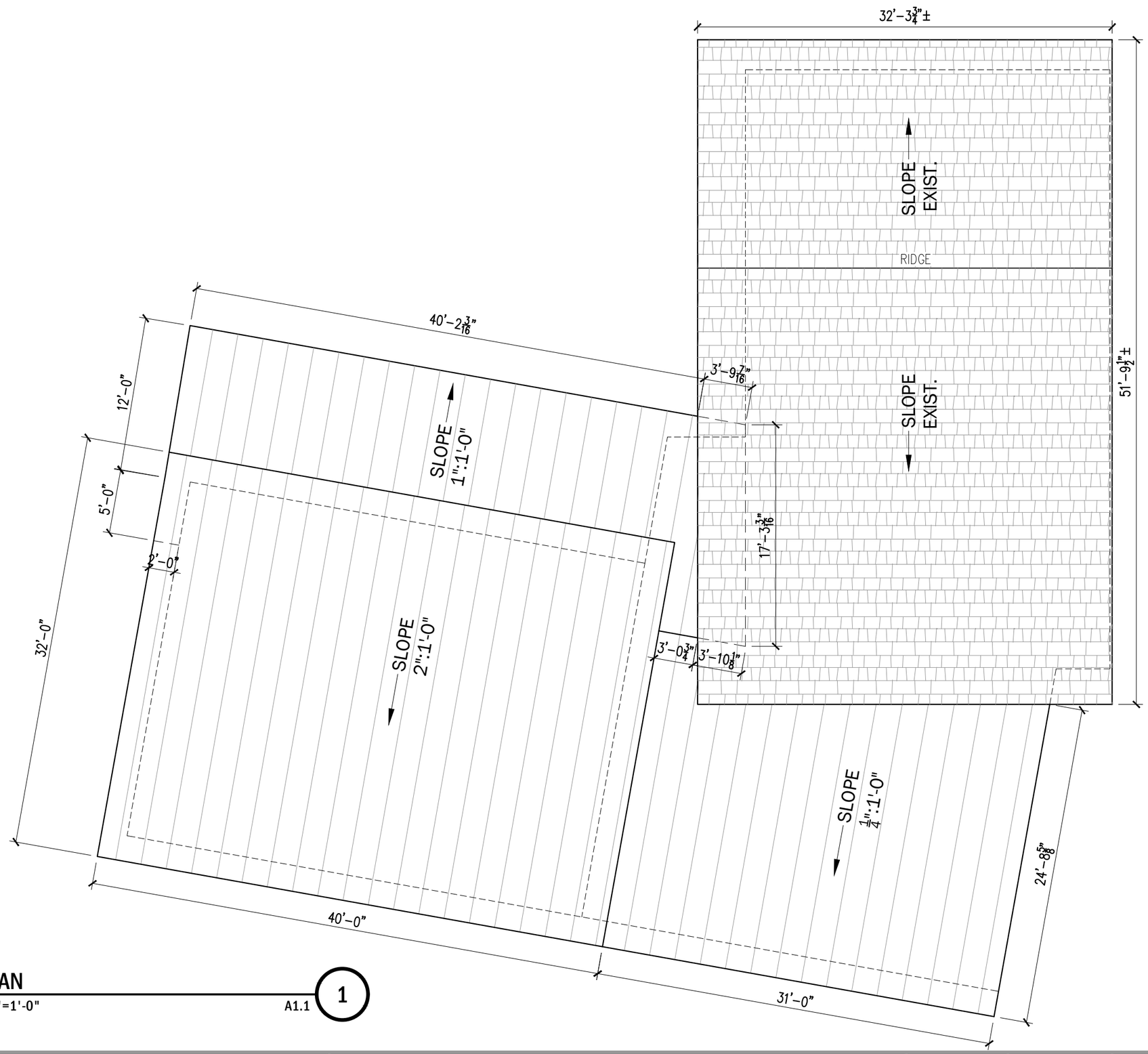
FLOOR PLAN

SCALE: 1/8"=1'-0"

A1.0

1

PROJECT 5 WHIPPLE RD - KITTERY, MAINE	DRAWING FLOOR PLAN	12/28/2023	7 WALLINGFORD SQUARE UNIT 2099 KITTERY, ME 03904 207.994.3104	WINTER HOLBEN	A1.0



ROOF PLAN

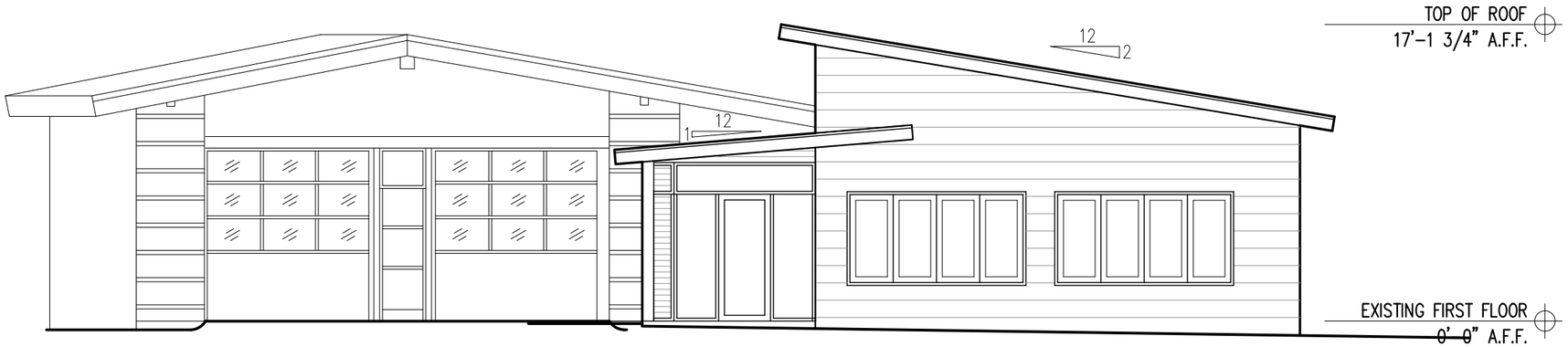
SCALE: 1/8"=1'-0"

A1.1 1

SOUTH ELEVATION

SCALE: 1/8"=1'-0"

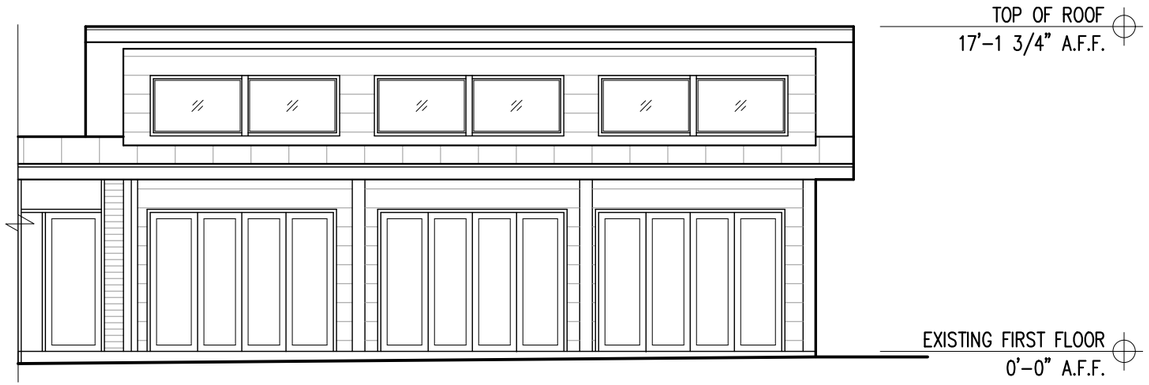
A2.0 1



WEST ELEVATION

SCALE: 1/8"=1'-0"

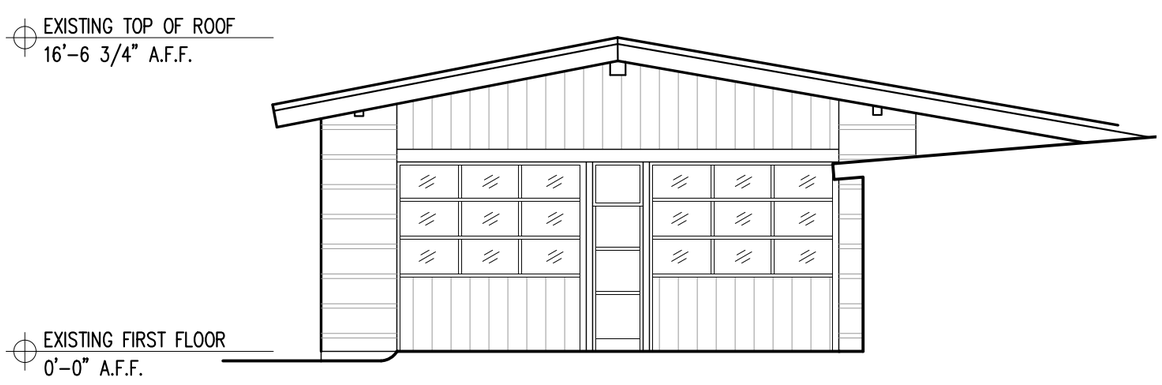
A2.0 2



PATIO ELEVATION

SCALE: 1/8"=1'-0"

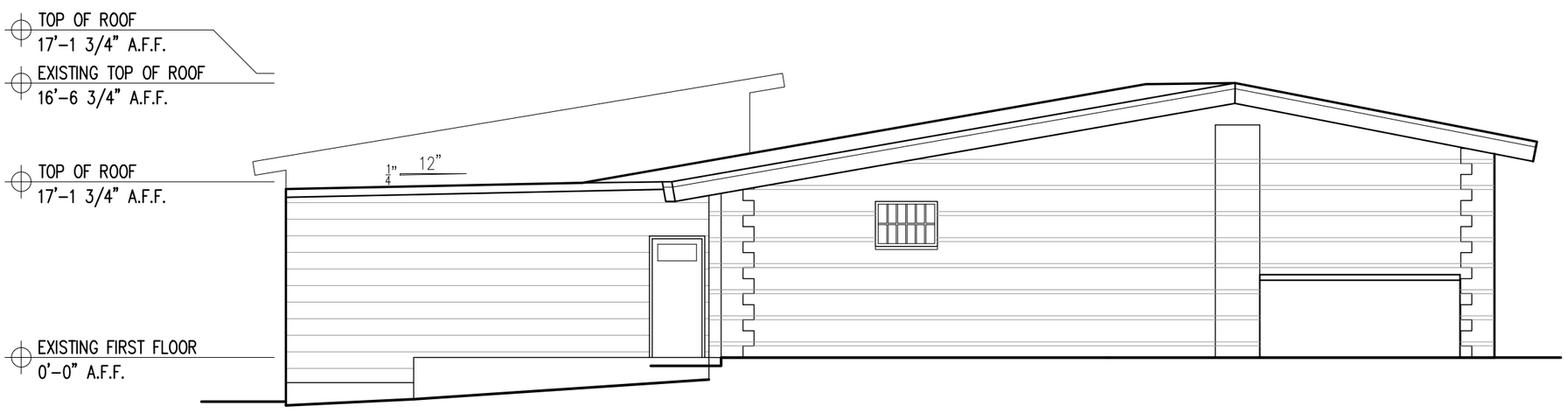
A2.1 1



WEST ELEVATIONS

SCALE: 1/8"=1'-0"

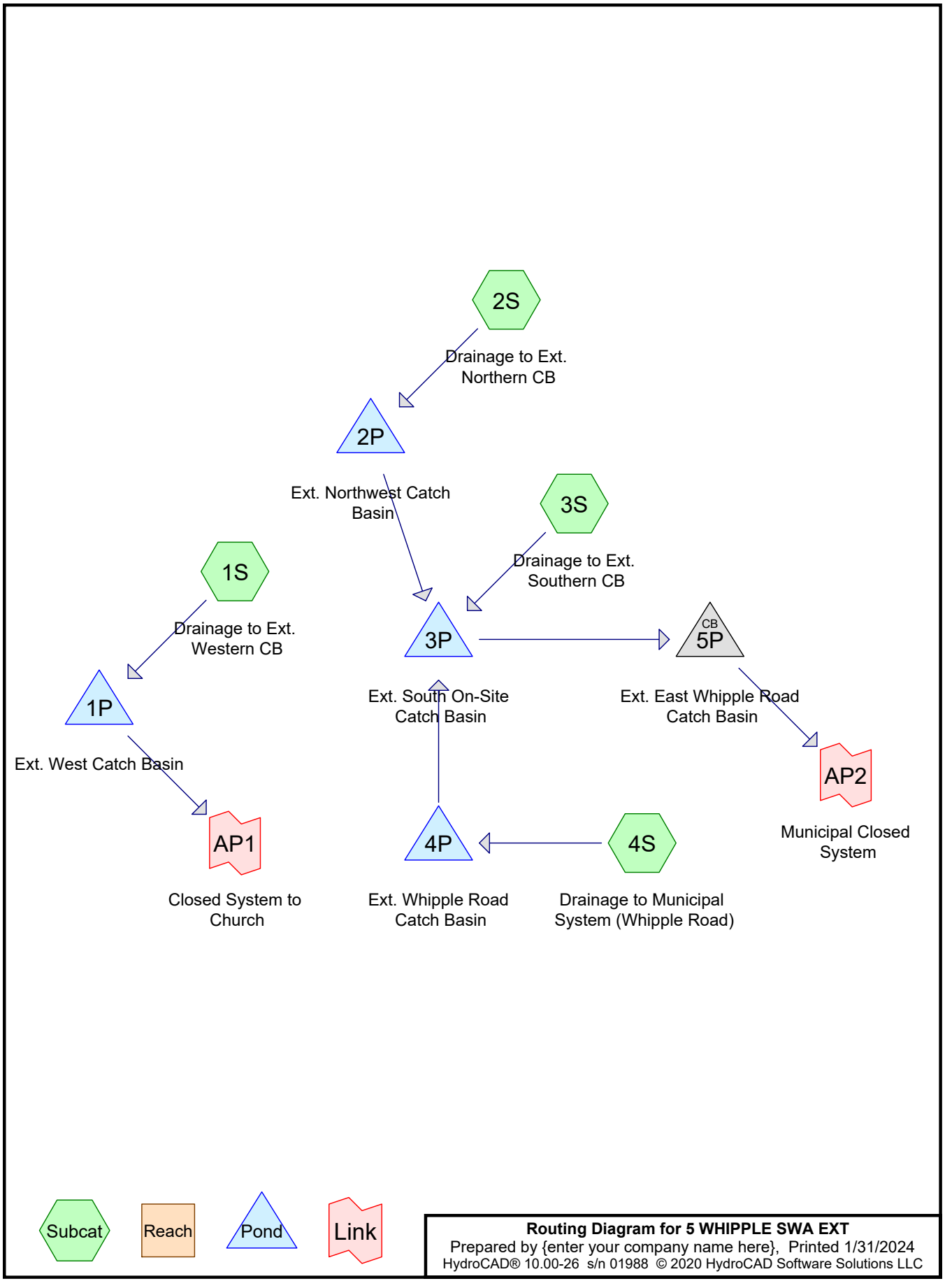
A2.1 2



EAST ELEVATION

SCALE: 1/8"=1'-0"

A2.1 3



Routing Diagram for 5 WHIPPLE SWA EXT

Prepared by {enter your company name here}, Printed 1/31/2024

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.146	80	>75% Grass cover, Good, HSG D (1S, 2S, 3S, 4S)
0.700	98	Paved parking, HSG D (1S, 2S, 3S, 4S)
0.015	98	Roofs, HSG D (4S)
0.033	98	Unconnected roofs, HSG D (3S)
0.894	**95**	**TOTAL AREA**

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Drainage to Ext. Western Runoff Area=1,965 sf 99.80% Impervious Runoff Depth>2.81"
Flow Length=41' Tc=6.0 min CN=WQ Runoff=0.14 cfs 0.011 af

Subcatchment 2S: Drainage to Ext. Runoff Area=1,623 sf 96.49% Impervious Runoff Depth>2.76"
Flow Length=67' Tc=6.0 min CN=WQ Runoff=0.11 cfs 0.009 af

Subcatchment 3S: Drainage to Ext. Runoff Area=13,029 sf 80.08% Impervious Runoff Depth>2.51"
Flow Length=202' Tc=5.3 min CN=WQ Runoff=0.84 cfs 0.063 af

Subcatchment 4S: Drainage to Municipal Runoff Area=22,347 sf 83.43% Impervious Runoff Depth>2.56"
Flow Length=309' Tc=3.4 min CN=WQ Runoff=1.59 cfs 0.110 af

Pond 1P: Ext. West Catch Basin Peak Elev=29.74' Storage=28 cf Inflow=0.14 cfs 0.011 af
12.0" Round Culvert n=0.013 L=130.0' S=0.0697 '/' Outflow=0.14 cfs 0.010 af

Pond 2P: Ext. Northwest Catch Basin Peak Elev=24.28' Storage=28 cf Inflow=0.11 cfs 0.009 af
24.0" Round Culvert n=0.013 L=69.0' S=0.0457 '/' Outflow=0.11 cfs 0.008 af

Pond 3P: Ext. South On-Site Catch Basin Peak Elev=21.58' Storage=36 cf Inflow=2.53 cfs 0.180 af
30.0" Round Culvert n=0.013 L=152.0' S=0.0026 '/' Outflow=2.53 cfs 0.179 af

Pond 4P: Ext. Whipple Road Catch Basin Peak Elev=25.68' Storage=36 cf Inflow=1.59 cfs 0.110 af
12.0" Round Culvert n=0.013 L=6.0' S=0.0217 '/' Outflow=1.59 cfs 0.109 af

Pond 5P: Ext. East Whipple Road Catch Basin Peak Elev=20.53' Inflow=2.53 cfs 0.179 af
30.0" Round Culvert n=0.013 L=50.0' S=0.0070 '/' Outflow=2.53 cfs 0.179 af

Link AP1: Closed System to Church Inflow=0.14 cfs 0.010 af
Primary=0.14 cfs 0.010 af

Link AP2: Municipal Closed System Inflow=2.53 cfs 0.179 af
Primary=2.53 cfs 0.179 af

Total Runoff Area = 0.894 ac Runoff Volume = 0.191 af Average Runoff Depth = 2.57"
16.32% Pervious = 0.146 ac 83.68% Impervious = 0.748 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Drainage to Ext. Western Runoff Area=1,965 sf 99.80% Impervious Runoff Depth>4.36"
Flow Length=41' Tc=6.0 min CN=WQ Runoff=0.21 cfs 0.016 af

Subcatchment 2S: Drainage to Ext. Runoff Area=1,623 sf 96.49% Impervious Runoff Depth>4.30"
Flow Length=67' Tc=6.0 min CN=WQ Runoff=0.17 cfs 0.013 af

Subcatchment 3S: Drainage to Ext. Runoff Area=13,029 sf 80.08% Impervious Runoff Depth>4.02"
Flow Length=202' Tc=5.3 min CN=WQ Runoff=1.34 cfs 0.100 af

Subcatchment 4S: Drainage to Municipal Runoff Area=22,347 sf 83.43% Impervious Runoff Depth>4.08"
Flow Length=309' Tc=3.4 min CN=WQ Runoff=2.52 cfs 0.174 af

Pond 1P: Ext. West Catch Basin Peak Elev=29.78' Storage=29 cf Inflow=0.21 cfs 0.016 af
12.0" Round Culvert n=0.013 L=130.0' S=0.0697 '/' Outflow=0.21 cfs 0.016 af

Pond 2P: Ext. Northwest Catch Basin Peak Elev=24.31' Storage=28 cf Inflow=0.17 cfs 0.013 af
24.0" Round Culvert n=0.013 L=69.0' S=0.0457 '/' Outflow=0.17 cfs 0.013 af

Pond 3P: Ext. South On-Site Catch Basin Peak Elev=21.79' Storage=39 cf Inflow=4.00 cfs 0.287 af
30.0" Round Culvert n=0.013 L=152.0' S=0.0026 '/' Outflow=4.00 cfs 0.286 af

Pond 4P: Ext. Whipple Road Catch Basin Peak Elev=25.95' Storage=39 cf Inflow=2.52 cfs 0.174 af
12.0" Round Culvert n=0.013 L=6.0' S=0.0217 '/' Outflow=2.52 cfs 0.174 af

Pond 5P: Ext. East Whipple Road Catch Basin Peak Elev=20.72' Inflow=4.00 cfs 0.286 af
30.0" Round Culvert n=0.013 L=50.0' S=0.0070 '/' Outflow=4.00 cfs 0.286 af

Link AP1: Closed System to Church Inflow=0.21 cfs 0.016 af
Primary=0.21 cfs 0.016 af

Link AP2: Municipal Closed System Inflow=4.00 cfs 0.286 af
Primary=4.00 cfs 0.286 af

Total Runoff Area = 0.894 ac Runoff Volume = 0.305 af Average Runoff Depth = 4.09"
16.32% Pervious = 0.146 ac 83.68% Impervious = 0.748 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Drainage to Ext. Western Runoff Area=1,965 sf 99.80% Impervious Runoff Depth>5.58"
Flow Length=41' Tc=6.0 min CN=WQ Runoff=0.27 cfs 0.021 af

Subcatchment 2S: Drainage to Ext. Runoff Area=1,623 sf 96.49% Impervious Runoff Depth>5.52"
Flow Length=67' Tc=6.0 min CN=WQ Runoff=0.22 cfs 0.017 af

Subcatchment 3S: Drainage to Ext. Runoff Area=13,029 sf 80.08% Impervious Runoff Depth>5.23"
Flow Length=202' Tc=5.3 min CN=WQ Runoff=1.74 cfs 0.130 af

Subcatchment 4S: Drainage to Municipal Runoff Area=22,347 sf 83.43% Impervious Runoff Depth>5.29"
Flow Length=309' Tc=3.4 min CN=WQ Runoff=3.25 cfs 0.226 af

Pond 1P: Ext. West Catch Basin Peak Elev=29.81' Storage=29 cf Inflow=0.27 cfs 0.021 af
12.0" Round Culvert n=0.013 L=130.0' S=0.0697 '/' Outflow=0.27 cfs 0.020 af

Pond 2P: Ext. Northwest Catch Basin Peak Elev=24.33' Storage=28 cf Inflow=0.22 cfs 0.017 af
24.0" Round Culvert n=0.013 L=69.0' S=0.0457 '/' Outflow=0.22 cfs 0.017 af

Pond 3P: Ext. South On-Site Catch Basin Peak Elev=21.93' Storage=41 cf Inflow=5.16 cfs 0.372 af
30.0" Round Culvert n=0.013 L=152.0' S=0.0026 '/' Outflow=5.16 cfs 0.372 af

Pond 4P: Ext. Whipple Road Catch Basin Peak Elev=26.22' Storage=43 cf Inflow=3.25 cfs 0.226 af
12.0" Round Culvert n=0.013 L=6.0' S=0.0217 '/' Outflow=3.24 cfs 0.225 af

Pond 5P: Ext. East Whipple Road Catch Basin Peak Elev=20.86' Inflow=5.16 cfs 0.372 af
30.0" Round Culvert n=0.013 L=50.0' S=0.0070 '/' Outflow=5.16 cfs 0.372 af

Link AP1: Closed System to Church Inflow=0.27 cfs 0.020 af
Primary=0.27 cfs 0.020 af

Link AP2: Municipal Closed System Inflow=5.16 cfs 0.372 af
Primary=5.16 cfs 0.372 af

Total Runoff Area = 0.894 ac Runoff Volume = 0.394 af Average Runoff Depth = 5.29"
16.32% Pervious = 0.146 ac 83.68% Impervious = 0.748 ac

Summary for Subcatchment 1S: Drainage to Ext. Western CB

Runoff = 0.27 cfs @ 12.09 hrs, Volume= 0.021 af, Depth> 5.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.28"

Area (sf)	CN	Description
1,961	98	Paved parking, HSG D
4	80	>75% Grass cover, Good, HSG D
1,965		Weighted Average
4		0.20% Pervious Area
1,961		99.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	41		0.11		**Direct Entry, SF 1**

Summary for Subcatchment 2S: Drainage to Ext. Northern CB

Runoff = 0.22 cfs @ 12.09 hrs, Volume= 0.017 af, Depth> 5.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.28"

Area (sf)	CN	Description
1,566	98	Paved parking, HSG D
57	80	>75% Grass cover, Good, HSG D
1,623		Weighted Average
57		3.51% Pervious Area
1,566		96.49% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	67		0.19		**Direct Entry, SF 1 & 2**

Summary for Subcatchment 3S: Drainage to Ext. Southern CB

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.74 cfs @ 12.08 hrs, Volume= 0.130 af, Depth> 5.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.28"

Area (sf)	CN	Description
8,985	98	Paved parking, HSG D
1,449	98	Unconnected roofs, HSG D
2,595	80	>75% Grass cover, Good, HSG D
13,029		Weighted Average
2,595		19.92% Pervious Area
10,434		80.08% Impervious Area
1,449		13.89% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	63	0.0516	0.23		**Sheet Flow, SF 1** Grass: Short n= 0.150 P2= 3.33"
0.8	139	0.0209	2.93		**Shallow Concentrated Flow, SCF 1** Paved Kv= 20.3 fps
5.3	202	Total			

Summary for Subcatchment 4S: Drainage to Municipal System (Whipple Road)

[49] Hint: Tc<2dt may require smaller dt

Runoff = 3.25 cfs @ 12.05 hrs, Volume= 0.226 af, Depth> 5.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.28"

Area (sf)	CN	Description
17,979	98	Paved parking, HSG D
664	98	Roofs, HSG D
3,704	80	>75% Grass cover, Good, HSG D
22,347		Weighted Average
3,704		16.57% Pervious Area
18,643		83.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	29	0.1520	0.30		**Sheet Flow, SF 1** Grass: Short n= 0.150 P2= 3.33"
0.6	71	0.0563	1.98		**Sheet Flow, SF 2** Smooth surfaces n= 0.011 P2= 3.33"
1.2	209	0.0213	2.96		**Shallow Concentrated Flow, SCF 1** Paved Kv= 20.3 fps
3.4	309	Total			

Summary for Pond 1P: Ext. West Catch Basin

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.045 ac, 99.80% Impervious, Inflow Depth > 5.58" for 25 YEAR STORM event
Inflow = 0.27 cfs @ 12.09 hrs, Volume= 0.021 af
Outflow = 0.27 cfs @ 12.09 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.1 min
Primary = 0.27 cfs @ 12.09 hrs, Volume= 0.020 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 29.81' @ 12.09 hrs Surf.Area= 13 sf Storage= 29 cf

Plug-Flow detention time= 24.0 min calculated for 0.020 af (97% of inflow)
Center-of-Mass det. time= 11.6 min (745.6 - 734.0)

Volume	Invert	Avail.Storage	Storage Description
#1	27.56'	187 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.56	13	0	0
29.56	13	26	26
32.06	13	33	59
32.56	500	128	187

Device	Routing	Invert	Outlet Devices
#1	Primary	29.56'	**12.0" Round CMP_Round 12"** L= 130.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 29.56' / 20.50' S= 0.0697 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.26 cfs @ 12.09 hrs HW=29.81' (Free Discharge)
1=CMP_Round 12" (Inlet Controls 0.26 cfs @ 1.71 fps)

Summary for Pond 2P: Ext. Northwest Catch Basin

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.037 ac, 96.49% Impervious, Inflow Depth > 5.52" for 25 YEAR STORM event
Inflow = 0.22 cfs @ 12.09 hrs, Volume= 0.017 af
Outflow = 0.22 cfs @ 12.09 hrs, Volume= 0.017 af, Atten= 0%, Lag= 0.1 min
Primary = 0.22 cfs @ 12.09 hrs, Volume= 0.017 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 24.33' @ 12.09 hrs Surf.Area= 13 sf Storage= 28 cf

Plug-Flow detention time= 28.1 min calculated for 0.016 af (96% of inflow)
Center-of-Mass det. time= 13.6 min (748.7 - 735.0)

Volume	Invert	Avail.Storage	Storage Description
#1	22.15'	261 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.15	13	0	0
24.15	13	26	26
32.35	13	107	133
32.85	500	128	261

Device	Routing	Invert	Outlet Devices
#1	Primary	24.15'	**24.0" Round CMP_Round 24"** L= 69.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 24.15' / 21.00' S= 0.0457 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 3.14 sf

Primary OutFlow Max=0.20 cfs @ 12.09 hrs HW=24.33' (Free Discharge)
1=CMP_Round 24" (Inlet Controls 0.20 cfs @ 1.44 fps)

Summary for Pond 3P: Ext. South On-Site Catch Basin

[82] Warning: Early inflow requires earlier time span
[79] Warning: Submerged Pond 2P Primary device # 1 OUTLET by 0.93'

Inflow Area = 0.849 ac, 82.82% Impervious, Inflow Depth > 5.26" for 25 YEAR STORM event
Inflow = 5.16 cfs @ 12.06 hrs, Volume= 0.372 af
Outflow = 5.16 cfs @ 12.06 hrs, Volume= 0.372 af, Atten= 0%, Lag= 0.0 min
Primary = 5.16 cfs @ 12.06 hrs, Volume= 0.372 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 21.93' @ 12.06 hrs Surf.Area= 13 sf Storage= 41 cf

Plug-Flow detention time= 1.7 min calculated for 0.370 af (99% of inflow)
Center-of-Mass det. time= 0.8 min (740.4 - 739.6)

Volume	Invert	Avail.Storage	Storage Description
#1	18.80'	288 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
18.80	13	0	0
20.80	13	26	26
31.10	13	134	160
31.60	500	128	288

Device	Routing	Invert	Outlet Devices
#1	Primary	20.80'	**30.0" Round CMP_Round 30"** L= 152.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 20.80' / 20.41' S= 0.0026 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=5.00 cfs @ 12.06 hrs HW=21.92' (Free Discharge)
1=CMP_Round 30" (Barrel Controls 5.00 cfs @ 3.47 fps)

Summary for Pond 4P: Ext. Whipple Road Catch Basin

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.513 ac, 83.43% Impervious, Inflow Depth > 5.29" for 25 YEAR STORM event
Inflow = 3.25 cfs @ 12.05 hrs, Volume= 0.226 af
Outflow = 3.24 cfs @ 12.05 hrs, Volume= 0.225 af, Atten= 0%, Lag= 0.1 min
Primary = 3.24 cfs @ 12.05 hrs, Volume= 0.225 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 26.22' @ 12.05 hrs Surf.Area= 13 sf Storage= 43 cf

Plug-Flow detention time= 2.8 min calculated for 0.225 af (100% of inflow)
Center-of-Mass det. time= 1.3 min (738.7 - 737.4)

Volume	Invert	Avail.Storage	Storage Description
#1	22.93'	227 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.93	13	0	0
24.93	13	26	26
30.55	13	73	99
31.05	500	128	227

Device	Routing	Invert	Outlet Devices
#1	Primary	24.93'	**12.0" Round CMP_Round 12"** L= 6.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 24.93' / 24.80' S= 0.0217 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=3.24 cfs @ 12.05 hrs HW=26.21' (Free Discharge)
1=CMP_Round 12" (Barrel Controls 3.24 cfs @ 4.18 fps)

Summary for Pond 5P: Ext. East Whipple Road Catch Basin

[57] Hint: Peaked at 20.86' (Flood elevation advised)
[79] Warning: Submerged Pond 3P Primary device # 1 INLET by 0.05'

Inflow Area = 0.849 ac, 82.82% Impervious, Inflow Depth > 5.25" for 25 YEAR STORM event
Inflow = 5.16 cfs @ 12.06 hrs, Volume= 0.372 af
Outflow = 5.16 cfs @ 12.06 hrs, Volume= 0.372 af, Atten= 0%, Lag= 0.0 min
Primary = 5.16 cfs @ 12.06 hrs, Volume= 0.372 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 20.86' @ 12.06 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	19.85'	**30.0" Round CMP_Round 30"** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 19.85' / 19.50' S= 0.0070 '/' Cc= 0.900

n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=5.01 cfs @ 12.06 hrs HW=20.84' (Free Discharge)
↑—**1=CMP_Round 30"** (Barrel Controls 5.01 cfs @ 4.11 fps)

Summary for Link AP1: Closed System to Church

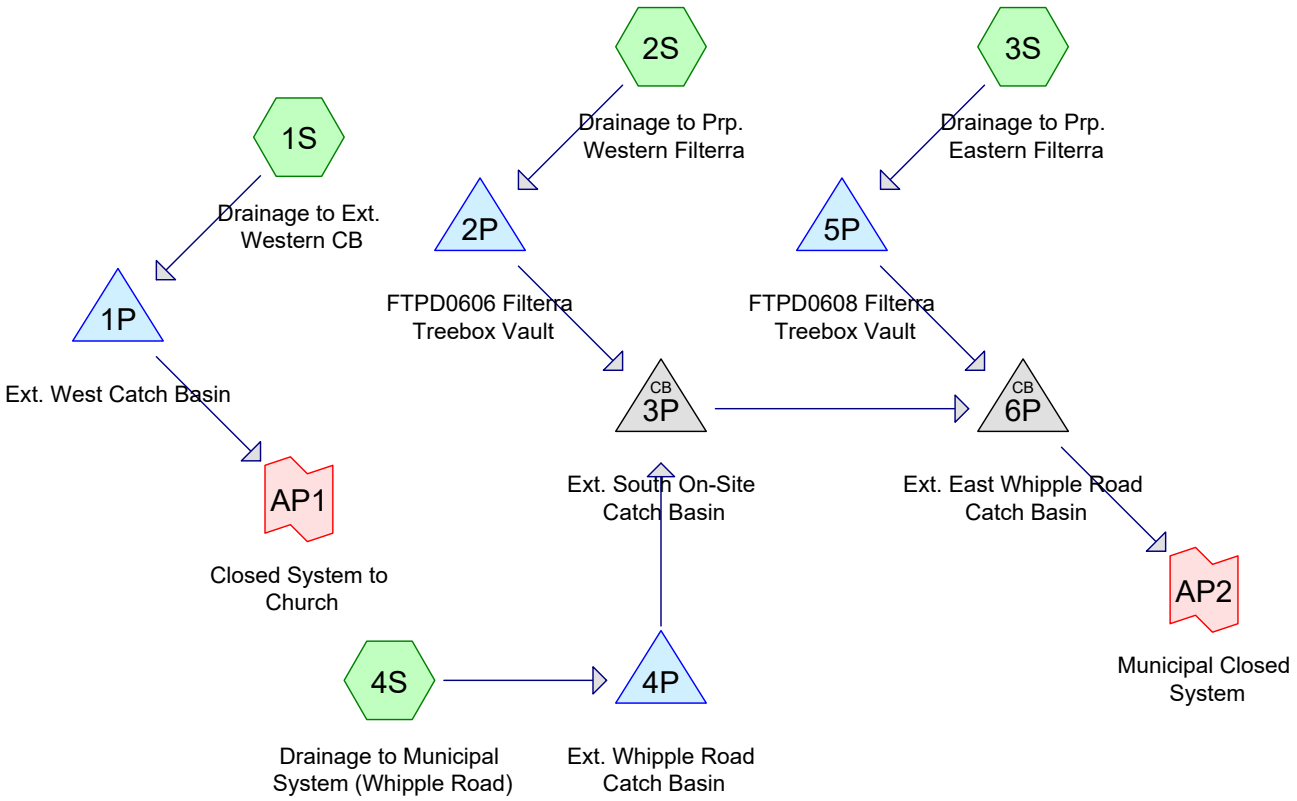
Inflow Area = 0.045 ac, 99.80% Impervious, Inflow Depth > 5.42" for 25 YEAR STORM event
Inflow = 0.27 cfs @ 12.09 hrs, Volume= 0.020 af
Primary = 0.27 cfs @ 12.09 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link AP2: Municipal Closed System

Inflow Area = 0.849 ac, 82.82% Impervious, Inflow Depth > 5.25" for 25 YEAR STORM event
Inflow = 5.16 cfs @ 12.06 hrs, Volume= 0.372 af
Primary = 5.16 cfs @ 12.06 hrs, Volume= 0.372 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



Subcat Reach Pond Link

Routing Diagram for 5 WHIPPLE SWA DEV

Prepared by {enter your company name here}, Printed 1/31/2024

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.263	80	>75% Grass cover, Good, HSG D (1S, 2S, 3S, 4S)
0.549	98	Paved parking, HSG D (1S, 2S, 3S, 4S)
0.082	98	Roofs, HSG D (2S, 3S)
0.894	**93**	**TOTAL AREA**

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Drainage to Ext. Western Runoff Area=2,016 sf 8.73% Impervious Runoff Depth>1.45"
Flow Length=43' Slope=0.0150 '/' Tc=5.5 min CN=WQ Runoff=0.08 cfs 0.006 af

Subcatchment 2S: Drainage to Prp. Runoff Area=12,799 sf 68.36% Impervious Runoff Depth>2.34"
Flow Length=205' Tc=6.1 min CN=WQ Runoff=0.77 cfs 0.057 af

Subcatchment 3S: Drainage to Prp. Runoff Area=14,564 sf 72.90% Impervious Runoff Depth>2.41"
Flow Length=178' Tc=5.8 min CN=WQ Runoff=0.90 cfs 0.067 af

Subcatchment 4S: Drainage to Municipal Runoff Area=9,585 sf 82.89% Impervious Runoff Depth>2.56"
Flow Length=196' Tc=6.0 min CN=WQ Runoff=0.62 cfs 0.047 af

Pond 1P: Ext. West Catch Basin Peak Elev=29.70' Storage=28 cf Inflow=0.08 cfs 0.006 af
12.0" Round Culvert n=0.013 L=130.0' S=0.0697 '/' Outflow=0.08 cfs 0.005 af

Pond 2P: FTPD0606 Filterra Treebox Vault Peak Elev=31.79' Storage=0.001 af Inflow=0.77 cfs 0.057 af
Outflow=0.76 cfs 0.057 af

Pond 3P: Ext. South On-Site Catch Basin Peak Elev=21.38' Inflow=1.38 cfs 0.104 af
30.0" Round Culvert n=0.013 L=152.0' S=0.0026 '/' Outflow=1.38 cfs 0.104 af

Pond 4P: Ext. Whipple Road Catch Basin Peak Elev=25.35' Storage=31 cf Inflow=0.62 cfs 0.047 af
12.0" Round Culvert n=0.013 L=6.0' S=0.0217 '/' Outflow=0.62 cfs 0.046 af

Pond 5P: FTPD0608 Filterra Treebox Vault Peak Elev=31.61' Storage=0.001 af Inflow=0.90 cfs 0.067 af
Outflow=0.89 cfs 0.068 af

Pond 6P: Ext. East Whipple Road Catch Basin Peak Elev=20.49' Inflow=2.27 cfs 0.171 af
30.0" Round Culvert n=0.013 L=50.0' S=0.0070 '/' Outflow=2.27 cfs 0.171 af

Link AP1: Closed System to Church Inflow=0.08 cfs 0.005 af
Primary=0.08 cfs 0.005 af

Link AP2: Municipal Closed System Inflow=2.27 cfs 0.171 af
Primary=2.27 cfs 0.171 af

Total Runoff Area = 0.894 ac Runoff Volume = 0.177 af Average Runoff Depth = 2.37"
29.45% Pervious = 0.263 ac 70.55% Impervious = 0.631 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Drainage to Ext. Western Runoff Area=2,016 sf 8.73% Impervious Runoff Depth>2.80"
Flow Length=43' Slope=0.0150 '/' Tc=5.5 min CN=WQ Runoff=0.16 cfs 0.011 af

Subcatchment 2S: Drainage to Prp. Runoff Area=12,799 sf 68.36% Impervious Runoff Depth>3.82"
Flow Length=205' Tc=6.1 min CN=WQ Runoff=1.25 cfs 0.094 af

Subcatchment 3S: Drainage to Prp. Runoff Area=14,564 sf 72.90% Impervious Runoff Depth>3.90"
Flow Length=178' Tc=5.8 min CN=WQ Runoff=1.45 cfs 0.109 af

Subcatchment 4S: Drainage to Municipal Runoff Area=9,585 sf 82.89% Impervious Runoff Depth>4.07"
Flow Length=196' Tc=6.0 min CN=WQ Runoff=0.98 cfs 0.075 af

Pond 1P: Ext. West Catch Basin Peak Elev=29.75' Storage=28 cf Inflow=0.16 cfs 0.011 af
12.0" Round Culvert n=0.013 L=130.0' S=0.0697 '/' Outflow=0.16 cfs 0.010 af

Pond 2P: FTPD0606 Filterra Treebox Vault Peak Elev=31.90' Storage=0.001 af Inflow=1.25 cfs 0.094 af
Outflow=1.24 cfs 0.094 af

Pond 3P: Ext. South On-Site Catch Basin Peak Elev=21.53' Inflow=2.22 cfs 0.168 af
30.0" Round Culvert n=0.013 L=152.0' S=0.0026 '/' Outflow=2.22 cfs 0.168 af

Pond 4P: Ext. Whipple Road Catch Basin Peak Elev=25.49' Storage=33 cf Inflow=0.98 cfs 0.075 af
12.0" Round Culvert n=0.013 L=6.0' S=0.0217 '/' Outflow=0.98 cfs 0.074 af

Pond 5P: FTPD0608 Filterra Treebox Vault Peak Elev=31.74' Storage=0.001 af Inflow=1.45 cfs 0.109 af
Outflow=1.44 cfs 0.109 af

Pond 6P: Ext. East Whipple Road Catch Basin Peak Elev=20.68' Inflow=3.66 cfs 0.276 af
30.0" Round Culvert n=0.013 L=50.0' S=0.0070 '/' Outflow=3.66 cfs 0.276 af

Link AP1: Closed System to Church Inflow=0.16 cfs 0.010 af
Primary=0.16 cfs 0.010 af

Link AP2: Municipal Closed System Inflow=3.66 cfs 0.276 af
Primary=3.66 cfs 0.276 af

Total Runoff Area = 0.894 ac Runoff Volume = 0.288 af Average Runoff Depth = 3.86"
29.45% Pervious = 0.263 ac 70.55% Impervious = 0.631 ac

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Drainage to Ext. Western Runoff Area=2,016 sf 8.73% Impervious Runoff Depth>3.94"
Flow Length=43' Slope=0.0150 '/' Tc=5.5 min CN=WQ Runoff=0.22 cfs 0.015 af

Subcatchment 2S: Drainage to Prp. Runoff Area=12,799 sf 68.36% Impervious Runoff Depth>5.01"
Flow Length=205' Tc=6.1 min CN=WQ Runoff=1.63 cfs 0.123 af

Subcatchment 3S: Drainage to Prp. Runoff Area=14,564 sf 72.90% Impervious Runoff Depth>5.10"
Flow Length=178' Tc=5.8 min CN=WQ Runoff=1.89 cfs 0.142 af

Subcatchment 4S: Drainage to Municipal Runoff Area=9,585 sf 82.89% Impervious Runoff Depth>5.28"
Flow Length=196' Tc=6.0 min CN=WQ Runoff=1.27 cfs 0.097 af

Pond 1P: Ext. West Catch Basin Peak Elev=29.79' Storage=29 cf Inflow=0.22 cfs 0.015 af
12.0" Round Culvert n=0.013 L=130.0' S=0.0697 '/' Outflow=0.22 cfs 0.015 af

Pond 2P: FTPD0606 Filterra Treebox Vault Peak Elev=31.98' Storage=0.001 af Inflow=1.63 cfs 0.123 af
Outflow=1.62 cfs 0.123 af

Pond 3P: Ext. South On-Site Catch Basin Peak Elev=21.64' Inflow=2.89 cfs 0.219 af
30.0" Round Culvert n=0.013 L=152.0' S=0.0026 '/' Outflow=2.89 cfs 0.219 af

Pond 4P: Ext. Whipple Road Catch Basin Peak Elev=25.58' Storage=34 cf Inflow=1.27 cfs 0.097 af
12.0" Round Culvert n=0.013 L=6.0' S=0.0217 '/' Outflow=1.27 cfs 0.096 af

Pond 5P: FTPD0608 Filterra Treebox Vault Peak Elev=31.82' Storage=0.001 af Inflow=1.89 cfs 0.142 af
Outflow=1.88 cfs 0.142 af

Pond 6P: Ext. East Whipple Road Catch Basin Peak Elev=20.81' Inflow=4.77 cfs 0.361 af
30.0" Round Culvert n=0.013 L=50.0' S=0.0070 '/' Outflow=4.77 cfs 0.361 af

Link AP1: Closed System to Church Inflow=0.22 cfs 0.015 af
Primary=0.22 cfs 0.015 af

Link AP2: Municipal Closed System Inflow=4.77 cfs 0.361 af
Primary=4.77 cfs 0.361 af

Total Runoff Area = 0.894 ac Runoff Volume = 0.377 af Average Runoff Depth = 5.05"
29.45% Pervious = 0.263 ac 70.55% Impervious = 0.631 ac

Summary for Subcatchment 1S: Drainage to Ext. Western CB

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.22 cfs @ 12.08 hrs, Volume= 0.015 af, Depth> 3.94"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.28"

Area (sf)	CN	Description
1,840	80	>75% Grass cover, Good, HSG D
176	98	Paved parking, HSG D
2,016		Weighted Average
1,840		91.27% Pervious Area
176		8.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	43	0.0150	0.13		**Sheet Flow, SF 1** Grass: Short n= 0.150 P2= 3.33"

Summary for Subcatchment 2S: Drainage to Prp. Western Filterra

Runoff = 1.63 cfs @ 12.09 hrs, Volume= 0.123 af, Depth> 5.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.28"

Area (sf)	CN	Description
7,652	98	Paved parking, HSG D
1,098	98	Roofs, HSG D
4,049	80	>75% Grass cover, Good, HSG D
12,799		Weighted Average
4,049		31.64% Pervious Area
8,750		68.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	63	0.0396	0.21		**Sheet Flow, SF 1** Grass: Short n= 0.150 P2= 3.33"
1.0	142	0.0150	2.49		**Shallow Concentrated Flow, SCF 1** Paved Kv= 20.3 fps
6.1	205	Total			

Summary for Subcatchment 3S: Drainage to Prp. Eastern Filterra

[49] Hint: Tc<2dt may require smaller dt

Runoff = 1.89 cfs @ 12.08 hrs, Volume= 0.142 af, Depth> 5.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.28"

Area (sf)	CN	Description
8,160	98	Paved parking, HSG D
2,457	98	Roofs, HSG D
3,947	80	>75% Grass cover, Good, HSG D
14,564		Weighted Average
3,947		27.10% Pervious Area
10,617		72.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	63	0.0357	0.20		**Sheet Flow, SF 1** Grass: Short n= 0.150 P2= 3.33"
0.5	115	0.0300	3.52		**Shallow Concentrated Flow, SCF 1** Paved Kv= 20.3 fps
5.8	178	Total			

Summary for Subcatchment 4S: Drainage to Municipal System (Whipple Road)

Runoff = 1.27 cfs @ 12.09 hrs, Volume= 0.097 af, Depth> 5.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YEAR STORM Rainfall=6.28"

Area (sf)	CN	Description
7,945	98	Paved parking, HSG D
1,640	80	>75% Grass cover, Good, HSG D
9,585		Weighted Average
1,640		17.11% Pervious Area
7,945		82.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0	196		0.54		**Direct Entry, SF 1 & SCF 1**

Summary for Pond 1P: Ext. West Catch Basin

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.046 ac, 8.73% Impervious, Inflow Depth > 3.94" for 25 YEAR STORM event
Inflow = 0.22 cfs @ 12.08 hrs, Volume= 0.015 af
Outflow = 0.22 cfs @ 12.09 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.2 min
Primary = 0.22 cfs @ 12.09 hrs, Volume= 0.015 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 29.79' @ 12.09 hrs Surf.Area= 13 sf Storage= 29 cf

Plug-Flow detention time= 26.6 min calculated for 0.015 af (96% of inflow)
Center-of-Mass det. time= 11.3 min (784.5 - 773.2)

Volume	Invert	Avail.Storage	Storage Description
#1	27.56'	187 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
27.56	13	0	0
29.56	13	26	26
32.06	13	33	59
32.56	500	128	187

Device	Routing	Invert	Outlet Devices
#1	Primary	29.56'	**12.0" Round CMP_Round 12"** L= 130.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 29.56' / 20.50' S= 0.0697 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.21 cfs @ 12.09 hrs HW=29.78' (Free Discharge)
└─**1=CMP_Round 12"** (Inlet Controls 0.21 cfs @ 1.61 fps)

Summary for Pond 2P: FTPD0606 Filterra Treebox Vault

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.294 ac, 68.36% Impervious, Inflow Depth > 5.01" for 25 YEAR STORM event
Inflow = 1.63 cfs @ 12.09 hrs, Volume= 0.123 af
Outflow = 1.62 cfs @ 12.09 hrs, Volume= 0.123 af, Atten= 1%, Lag= 0.0 min
Primary = 1.62 cfs @ 12.09 hrs, Volume= 0.123 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 31.98' @ 12.09 hrs Surf.Area= 0.001 ac Storage= 0.001 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1.0 min (745.8 - 744.8)

Volume	Invert	Avail.Storage	Storage Description
#1	30.78'	0.001 af	**6.00'W x 6.00'L x 1.50'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	28.62'	**12.0" Round CMP_Round 12"** L= 49.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 28.62' / 28.20' S= 0.0086 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	30.78'	**140.000 in/hr Filterra Media Infiltration over Surface area**
#3	Device 1	31.53'	**1.7' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.58 cfs @ 12.09 hrs HW=31.97' (Free Discharge)
└─**1=CMP_Round 12"** (Passes 1.58 cfs of 6.02 cfs potential flow)
  ├─**2=Filterra Media Infiltration** (Exfiltration Controls 0.12 cfs)
  └─**3=Broad-Crested Rectangular Weir** (Weir Controls 1.47 cfs @ 1.96 fps)

Summary for Pond 3P: Ext. South On-Site Catch Basin

[82] Warning: Early inflow requires earlier time span
[57] Hint: Peaked at 21.64' (Flood elevation advised)

Inflow Area = 0.514 ac, 74.58% Impervious, Inflow Depth > 5.12" for 25 YEAR STORM event
Inflow = 2.89 cfs @ 12.09 hrs, Volume= 0.219 af
Outflow = 2.89 cfs @ 12.09 hrs, Volume= 0.219 af, Atten= 0%, Lag= 0.0 min
Primary = 2.89 cfs @ 12.09 hrs, Volume= 0.219 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 21.64' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	20.80'	**30.0" Round CMP_Round 30"** L= 152.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 20.80' / 20.41' S= 0.0026 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=2.82 cfs @ 12.09 hrs HW=21.63' (Free Discharge)
1=CMP_Round 30" (Barrel Controls 2.82 cfs @ 2.96 fps)

Summary for Pond 4P: Ext. Whipple Road Catch Basin

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.220 ac, 82.89% Impervious, Inflow Depth > 5.28" for 25 YEAR STORM event
Inflow = 1.27 cfs @ 12.09 hrs, Volume= 0.097 af
Outflow = 1.27 cfs @ 12.09 hrs, Volume= 0.096 af, Atten= 0%, Lag= 0.1 min
Primary = 1.27 cfs @ 12.09 hrs, Volume= 0.096 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 25.58' @ 12.09 hrs Surf.Area= 13 sf Storage= 34 cf

Plug-Flow detention time= 6.0 min calculated for 0.096 af (99% of inflow)
Center-of-Mass det. time= 2.9 min (742.4 - 739.5)

Volume	Invert	Avail.Storage	Storage Description
#1	22.93'	227 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
22.93	13	0	0
24.93	13	26	26
30.55	13	73	99
31.05	500	128	227

Device	Routing	Invert	Outlet Devices
#1	Primary	24.93'	**12.0" Round CMP_Round 12"** L= 6.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 24.93' / 24.80' S= 0.0217 '/' Cc= 0.900

n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.24 cfs @ 12.09 hrs HW=25.57' (Free Discharge)
└**1=CMP_Round 12"** (Barrel Controls 1.24 cfs @ 3.32 fps)

Summary for Pond 5P: FTPD0608 Filterra Treebox Vault

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.334 ac, 72.90% Impervious, Inflow Depth > 5.10" for 25 YEAR STORM event
Inflow = 1.89 cfs @ 12.08 hrs, Volume= 0.142 af
Outflow = 1.88 cfs @ 12.09 hrs, Volume= 0.142 af, Atten= 1%, Lag= 0.1 min
Primary = 1.88 cfs @ 12.09 hrs, Volume= 0.142 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs / 2
Peak Elev= 31.82' @ 12.09 hrs Surf.Area= 0.001 ac Storage= 0.001 af

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 1.1 min (744.0 - 742.9)

Volume	Invert	Avail.Storage	Storage Description
#1	30.58'	0.002 af	**8.00'W x 6.00'L x 1.50'H Prismatoid**

Device	Routing	Invert	Outlet Devices
#1	Primary	28.42'	**12.0" Round CMP_Round 12"** L= 65.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 28.42' / 28.00' S= 0.0065 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Device 1	30.58'	**140.000 in/hr Exfiltration over Surface area**
#3	Device 1	31.33'	**1.7' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.82 cfs @ 12.09 hrs HW=31.81' (Free Discharge)
└**1=CMP_Round 12"** (Passes 1.82 cfs of 5.61 cfs potential flow)
  ├**2=Exfiltration** (Exfiltration Controls 0.16 cfs)
  └**3=Broad-Crested Rectangular Weir** (Weir Controls 1.67 cfs @ 2.06 fps)

Summary for Pond 6P: Ext. East Whipple Road Catch Basin

[82] Warning: Early inflow requires earlier time span
[57] Hint: Peaked at 20.81' (Flood elevation advised)
[79] Warning: Submerged Pond 3P Primary device # 1 INLET by 0.01'

Inflow Area = 0.848 ac, 73.92% Impervious, Inflow Depth > 5.11" for 25 YEAR STORM event
Inflow = 4.77 cfs @ 12.09 hrs, Volume= 0.361 af
Outflow = 4.77 cfs @ 12.09 hrs, Volume= 0.361 af, Atten= 0%, Lag= 0.0 min
Primary = 4.77 cfs @ 12.09 hrs, Volume= 0.361 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 20.81' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	19.85'	**30.0" Round CMP_Round 30"** L= 50.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 19.85' / 19.50' S= 0.0070 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 4.91 sf

Primary OutFlow Max=4.65 cfs @ 12.09 hrs HW=20.80' (Free Discharge)
↑—**1=CMP_Round 30"** (Barrel Controls 4.65 cfs @ 4.04 fps)

Summary for Link AP1: Closed System to Church

Inflow Area = 0.046 ac, 8.73% Impervious, Inflow Depth > 3.79" for 25 YEAR STORM event
Inflow = 0.22 cfs @ 12.09 hrs, Volume= 0.015 af
Primary = 0.22 cfs @ 12.09 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link AP2: Municipal Closed System

Inflow Area = 0.848 ac, 73.92% Impervious, Inflow Depth > 5.11" for 25 YEAR STORM event
Inflow = 4.77 cfs @ 12.09 hrs, Volume= 0.361 af
Primary = 4.77 cfs @ 12.09 hrs, Volume= 0.361 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Maine Meat Butcher & Restaurant - Existing Condition Peak Flows

Analysis Point	2 Year Storm (cfs)	10 Year Storm (cfs)	25 Year Storm (cfs)	
AP1	0.14	0.21	0.27	
AP2	2.53	4.00	5.16	

Rainfall Event Totals (in.)	
2-Year	3.24
10-Year	4.94
25-Year	6.28

Maine Meat Butcher & Restaurant - Developed Condition Peak Flows

Analysis Point	2 Year Storm (cfs)	10 Year Storm (cfs)	25 Year Storm (cfs)	
AP1	0.08	0.16	0.22	
AP2	2.27	3.66	4.77	

Maine Meat Butcher & Restaurant - Change in Peak Flows

Analysis Point	2 Year Storm (cfs)	10 Year Storm (cfs)	25 Year Storm (cfs)	
AP1	-0.06	-0.05	-0.05	
AP2	-0.26	-0.34	-0.39	

1/31/2024

Filterra Sizing Summary

Project: 5 Whipple Road, Kittery, ME (CES #786930)

Design Parameters:

- MEDEP WQ Design Storm = 1" of Rainfall
- Filterra Media Flow Rate = 140 in/hr
- Allowable Ponding in Filterra = 9 inches

Design Summary:

Utilizing HydroCAD software, a hydrograph can be derived to represent the MEDEP's WQ design storm by modelling a 0.95" Type III – 24 hour rain event (Figure 1 for each system). This storm can then be routed through an appropriately sized Filterra unit. Because the Filterra system can provide up to 9 inches of ponding, some flow attenuation is possible, and the Filterra system is able to accommodate a portion of the water quality volume in the head space above the media and release it at the system's design flow rate. The hydrograph in Figure 2 for each system illustrates this concept.

Unit	Area Impervious (sf)	CN	Area Pervious (sf)	CN	MEDEP Treatment Flow (cfs)	Filterra Media Bed (ft x ft)	Media Outflow (cfs)	Vault Size (ft x ft)	Filterra Model	WQ Ponding Depth (inches)
Western	8,750	98	4,049	80	0.18	6x6	0.12	6x8	FTPD0606	7.32
Eastern	10,617	98	3,947	80	0.21	6x8	0.16	6x10	FTPD0604	4.8

The following are the WQ storm hydrographs for each unit:

Western unit:

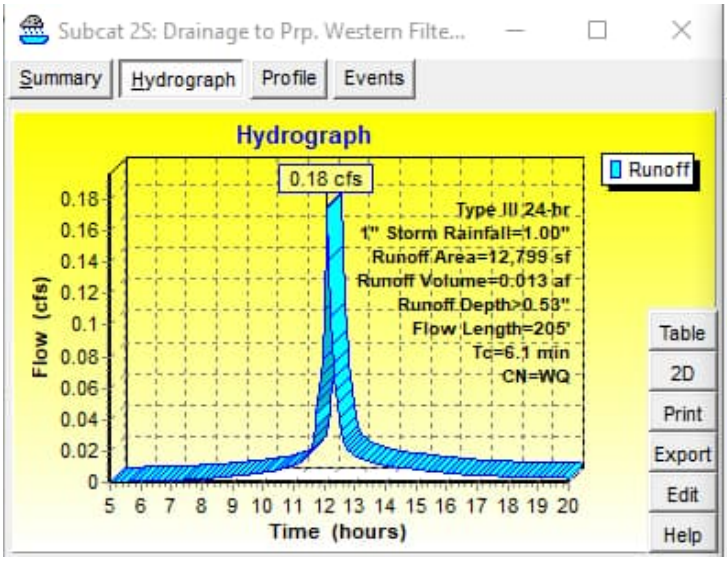


Figure 1. Inflow rate during the WQ Event.

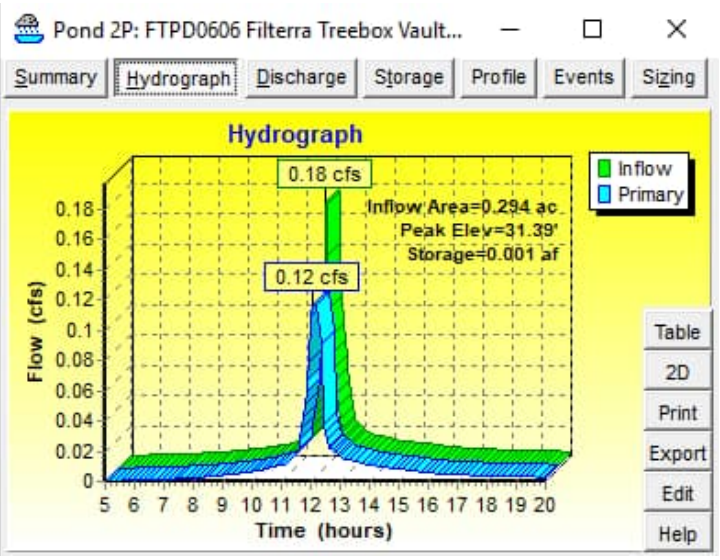


Figure 2. Inflow rate during WQ storm event compared with the Filterra outflow rate, accounting for 9" maximum ponding depth within the unit.

Eastern unit:

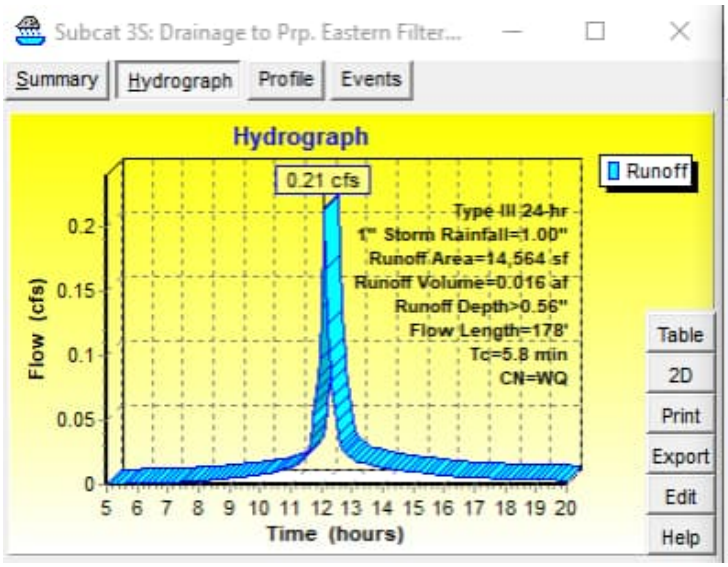


Figure 1. Inflow rate during the WQ Event.

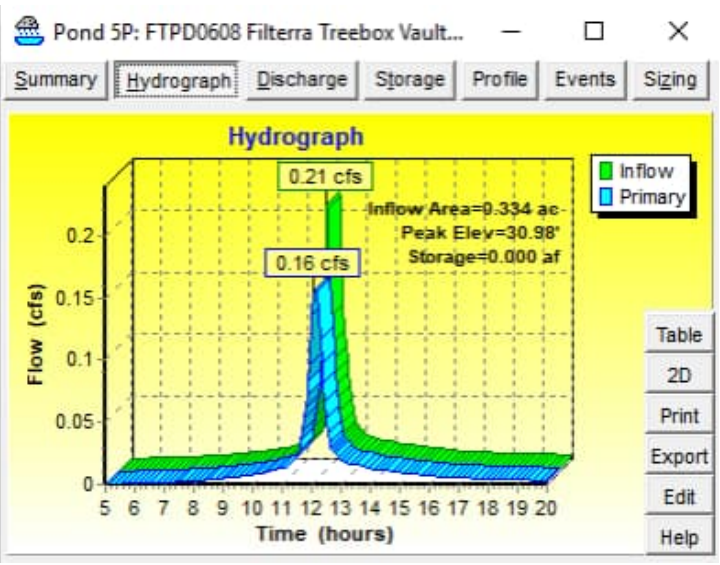
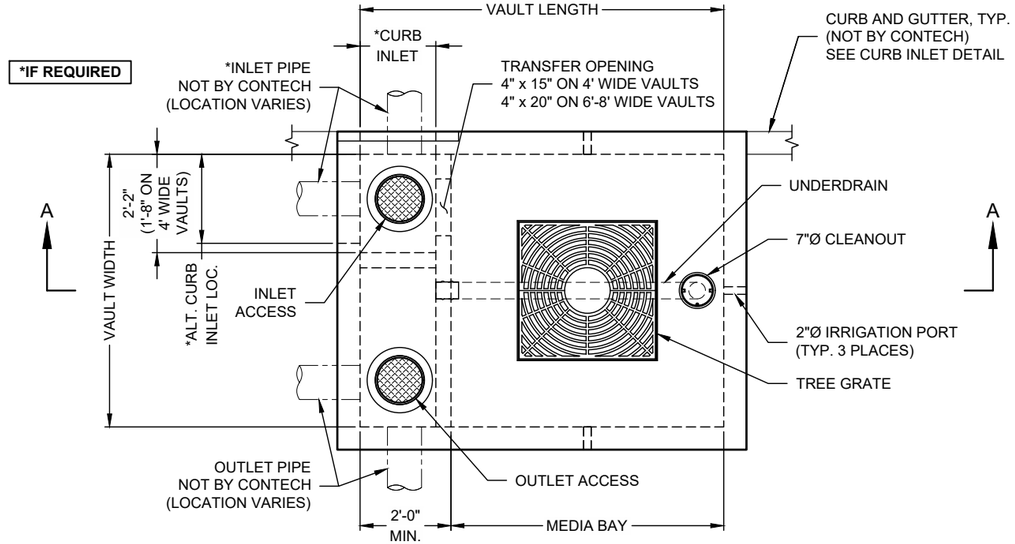


Figure 2. Inflow rate during WQ storm event compared with the Filterra outflow rate, accounting for 9" maximum ponding depth within the unit.

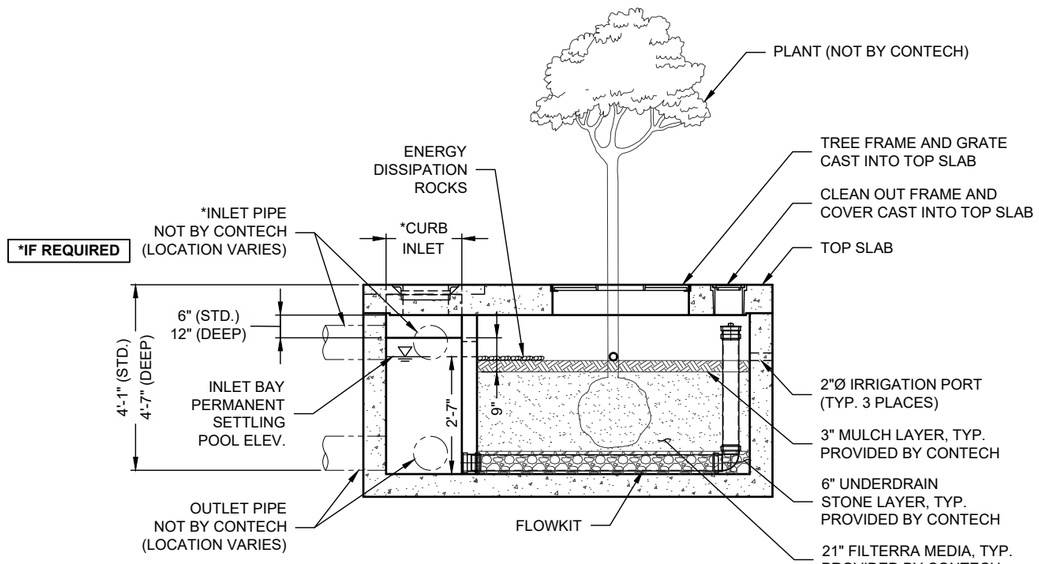
Thank you for the opportunity to present this to you and your client. This letter provides confirmation that each Filterra system is appropriately sized to comply with the Filterra approval letter issued by Maine Department of Environmental Protection. Please do not hesitate to contact me should you have any additional questions.

Sincerely,

Dave Adams, PE (ME)
Contech Engineered Solutions, LLC.
(207) 885-6991
dave.adams@conteches.com



PLAN VIEW



SECTION A-A
(STANDARD DEPTH SHOWN)

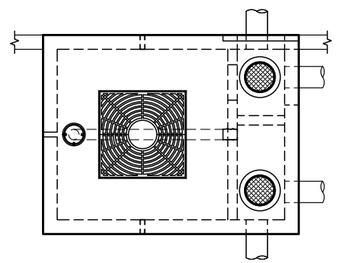
INTERNAL PIPE CONFIGURATION MAY VARY
DEPENDING UPON OUTLET LOCATION

filterra®
FOR PATENT INFORMATION, GO TO www.ContechES.com/IP

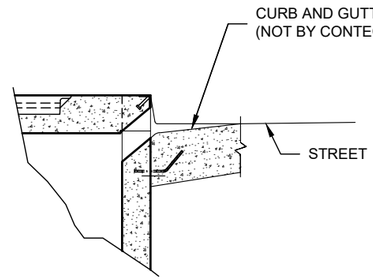
FTPD CONFIGURATION
(OPTIONS: DEEP "-D", THROAT INLET "-T", PIPE INLET "-P", PIPE AND THROAT INLET "-PT')

MODEL NAME	PART NUMBER	AVAILABILITY	MEDIA AREA (SF)	MEDIA BAY SIZE	VAULT SIZE (W x L)	WEIR LENGTH/ MAX. CURB OPENING	*MAX. BYPASS FLOW (CFS) STD / DEEP	INLET/ OUTLET ACCESS DIA.	TREE GRATE QTY. AND SIZE
FTPD 4x4 (4x6 VAULT)	FTPD0404	ALL	16	4 x 4	4 x 6	1'-8"	1.4 / 4.6	12"/12"	(1) 3' x 3'
FTPD 4x6 (4x8 VAULT)	FTPD0406	ALL (EXCEPT DE, MD, NJ, PA, VA, WV)	24	4 x 6	4 x 8	1'-8"	1.4 / 4.6	12"/12"	(1) 3' x 3'
FTPD 6x4 (6x6 VAULT)	FTPD0604	ALL (EXCEPT CA, TX)	24	6 x 4	6 x 6	1'-8"	1.4 / 4.6	12"/12"	(1) 3' x 3'
FTPD 4.5x5.8 (4.5x7.8 VAULT)	FTPD045058	DE, MD, NJ, PA, VA, WV ONLY	26	4.5 x 5.83	4.5 x 7.83	1'-8"	1.4 / 4.6	12"/12"	(1) 3' x 3'
FTPD 6x6 (6x8 VAULT)	FTPD0606	ALL	36	6 x 6	6 x 8	1'-8"	1.4 / 4.6	12"/12"	(1) 3' x 3'
FTPD 6x8 (6x10 VAULT)	FTPD0608	ALL (EXCEPT CA, TX)	48	6 x 8	6 x 10	1'-8"	1.4 / 4.6	12"/12"	(1) 4' x 4'
FTPD 8x7 (8x10 VAULT)	FTPD0807	CA, TX ONLY	56	8 x 7	8 x 10	2'-6"	2.1 / 6.8	24"/24"	(1) 4' x 4'
FTPD 6x10 (6x12 VAULT)	FTPD0610	ALL (EXCEPT CA, TX)	60	6 x 10	6 x 12	1'-8"	1.4 / 4.6	12"/12"	(1) 4' x 4'
FTPD 7x10 (7x13 VAULT)	FTPD0710	ALL (EXCEPT CA, TX)	70	7 x 10	7 x 13	2'-6"	2.1 / 6.8	24"/24"	(1) 4' x 4'
FTPD 8x9 (8x12 VAULT)	FTPD0809	CA, TX ONLY	72	8 x 9	8 x 12	2' -6"	2.1 / 6.8	24"/24"	(1) 4' x 4'
FTPD 8x10.5 (8x14 VAULT)	FTPD08105	ALL	84	8 x 10.5	8 x 14	3'-0"	2.5 / 8.2	24"/24"	(1) 4' x 4'
FTPD 8x12.5 (8x16 VAULT)	FTPD08125	ALL (EXCEPT OR, WA)	100	8 x 12.5	8 x 16	3'-0"	2.5 / 8.2	24"/24"	(2) 4' x 4'
FTPD 9x11.5 (9x15 VAULT)	FTPD09115	OR, WA ONLY	103	9 x 11.5	9 x 15	3'-0"	2.5 / 8.2	24"/24"	(2) 4' x 4'

*MAX. BYPASS FLOW IS INTERNAL WEIR FLOW. CAPACITIES SHOWN ARE FOR STANDARD DEPTH AND DEEP (-D), RESPECTIVELY. SITE SPECIFIC ANALYSIS IS REQUIRED TO DETERMINE CURB INLET FLOW CAPACITY.



ALTERNATE ORIENTATION



CURB INLET DETAIL

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9100 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

FILTERRA PEAK DIVERSION (FTPD)
CONFIGURATION DETAIL

Filterra Vault Owner's Manual

(Precast Vault Configurations)

filterra®

Bioretention Systems

CONTECH®

ENGINEERED SOLUTIONS

This Owner's Manual applies to all precast Filterra Configurations, including Filterra Bioscape Vault and Filterra HC.

filterra®
Bioretention Systems

Table of Contents

CONTECH®
ENGINEERED SOLUTIONS

Introduction

Thank you for your purchase of the Filterra® Bioretention System. Filterra is a specially engineered stormwater treatment system incorporating high performance biofiltration media to remove pollutants from stormwater runoff. The system's biota (vegetation and soil microorganisms) then further breakdown and absorb captured pollutants. All components of the system work together to provide a sustainable long-term solution for treating stormwater runoff.

The Filterra system has been delivered to you with protection in place to resist intrusion of construction related sediment which can contaminate the biofiltration media and result in inadequate system performance. These protection devices are intended as a best practice and cannot fully prevent contamination. It is the purchaser's responsibility to provide adequate measures to prevent construction related runoff from entering the Filterra system.

Included with your purchase is Activation of the Filterra system by the manufacturer as well as a 1-year warranty from delivery of the system and a final site assessment of unit condition (mulch replacement, debris removal, and pruning of vegetation) scheduled between 6 and 12 months after activation, upon request.

Design and Installation

Each project presents different scopes for the use of Filterra systems. Information and help may be provided to the design engineer during the planning process. Correct Filterra box sizing (by rainfall region) is essential to predict pollutant removal rates for a given area. The engineer shall submit calculations for approval by the local jurisdiction. The contractor is responsible for the correct installation of Filterra units as shown in approved plans. A comprehensive installation manual is available at www.ContechES.com.

Activation Overview

Activation of the Filterra system is a procedure completed by the manufacturer to place the system into working condition. This involves the following items:

- Removal of construction runoff protection devices.
- Planting of the system's vegetation (provided by the purchaser).
- Placement of pretreatment mulch layer using mulch acceptable for use in Filterra systems.

Activation MUST be provided by the manufacturer to ensure proper site conditions are met for Activation, proper installation of the vegetation, and use of pretreatment mulch acceptable for use in Filterra systems. More information is available in the Filterra Activation Package.

Minimum Requirements

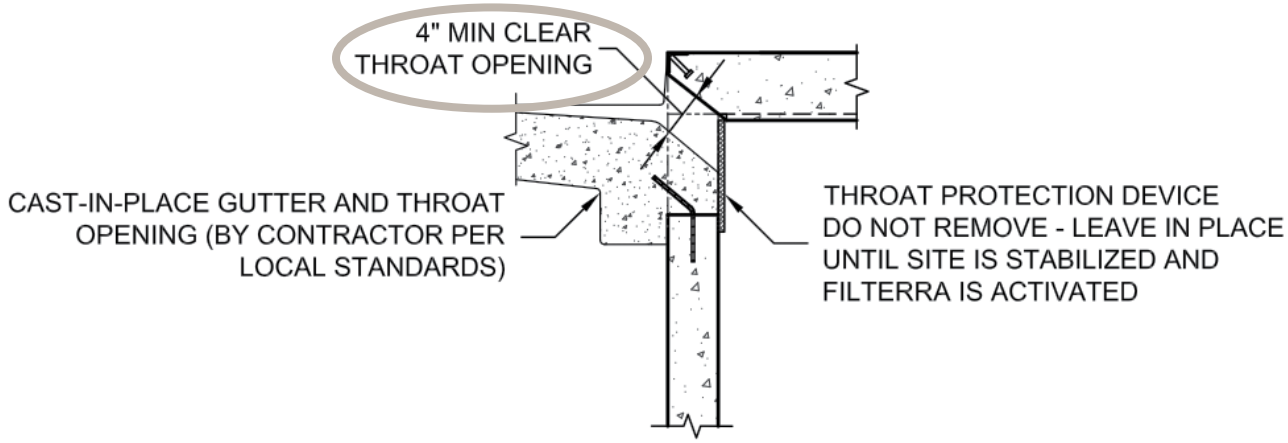
The minimum requirements for Filterra Activation are as follows:

1. **The purchaser must have procured vegetation meeting the requirements outlined in the Filterra Activation Package.**

2. The site landscaping must be fully stabilized, i.e. full landscaping installed and some grass cover (not just straw and seed) is required to reduce sediment transport. Construction debris and materials should be removed from surrounding area.

3. Final paving must be completed. Final paving ensures that paving materials will not enter and contaminate the Filterra system during the paving process, and that the plant will receive runoff from the drainage area, assisting with plant survival for the Filterra system.

4. Filterra throat opening should be at least 4" in order to ensure adequate capacity for inflow and debris.



The Filterra Activation Package is available on the Contech website (www.ContechES.com/filterra) and ensures that the proper conditions are met for Contech to perform the Activation service. Vegetation meeting Contech's requirements must be provided at time of Activation. If the site does not meet the conditions required for Activation, or acceptable vegetation is not provided by the purchaser at time of Activation, a charge of $1,500 will be invoiced to the purchaser.

Filterra Plant Selection Overview

A Plant List is available on the Contech website highlighting recommended plants for Filterra systems in your area. Keep in mind that plants are subject to availability due to seasonality and required minimum size for the Filterra system. Plants installed in the Filterra system are container plants (max 15 gallon) from nursery stock and will be immature in height and spread at Activation.

It is the responsibility of the owner to provide adequate irrigation when necessary to the plant of the Filterra system.

More information is available in the Filterra Activation Package.

Warranty Overview

Refer to the Contech Engineered Solutions LLC Stormwater Treatment System LIMITED WARRANTY for further information. The following conditions may void the Filterra system's warranty and waive the manufacturer provided Activation and Final Site Assessment services:

- Unauthorized activation or performance of any of the items listed in the activation overview
- Any tampering, modifications or damage to the Filterra system or runoff protection devices
- Removal of any Filterra system components
- Failure to prevent construction related runoff from entering the Filterra system
- Failure to properly store and protect any Filterra components (including media and underdrain stone) that may be shipped separately from the vault

Final Site Assessment

With proper routine maintenance, the biofiltration media within the Filterra system should last as long as traditional bioretention media. A final site assessment is included by the manufacturer, upon request, on all Filterra systems between 6 and 12 months after activation. This includes a final assessment of unit condition, debris removal, mulch replacement, and pruning of vegetation. More information is provided in the Operations and Maintenance Guidelines. Some Filterra systems also contain pretreatment or outlet bays. Depending on site pollutant loading, these bays may require periodic removal of debris, however this is not included in the final site assessment, and would likely not be required within the first year of operation.

These services, as well as routine maintenance outside of the included first year, can be provided by certified maintenance providers listed on the Contech website. Training can also be provided to other stormwater maintenance or landscape providers.

Why Maintain?

All stormwater treatment systems require maintenance for effective operation. This necessity is often incorporated in your property's permitting process as a legally binding BMP maintenance agreement. Other reasons to maintain are:

- Avoiding legal challenges from your jurisdiction's maintenance enforcement program.
- Prolonging the expected lifespan of your Filterra media.
- Avoiding more costly media replacement.
- Helping reduce pollutant loads leaving your property.

Simple maintenance of the Filterra is required to continue effective pollutant removal from stormwater runoff before discharge into downstream waters. This procedure will also extend the longevity of the living biofilter system. The unit will recycle and accumulate pollutants within the biomass, but is also subjected to other materials entering the inlet. This may include trash, silt and leaves etc. which will be contained above the mulch layer. Too much silt may inhibit the Filterra's flow rate, which is the reason for site stabilization before activation. Regular replacement of the mulch stops accumulation of such sediment.

When to Maintain?

Maintenance visits are scheduled seasonally; the spring visit aims to clean up after winter loads including salts and sands while the fall visit helps the system by removing excessive leaf litter.

It has been found that in regions which receive between 30-50 inches of annual rainfall, (2) two visits are generally required; in regions with less rainfall often only (1) one visit per annum is sufficient. Varying land uses can affect maintenance frequency. Contributing drainage areas which are subject to new development wherein the recommended erosion and sediment control measures have not been implemented may require additional maintenance visits.

Some sites may be subjected to extreme sediment or trash loads, requiring more frequent maintenance visits. This is the reason for detailed notes of maintenance actions per unit, helping the Supplier and Owner predict future maintenance frequencies, reflecting individual site conditions.

Owners must promptly notify the maintenance provider of any damage to the plant(s), which constitute(s) an integral part of the bioretention technology.

Exclusion of Services

Clean up due to major contamination such as oils, chemicals, toxic spills, etc. will result in additional costs and are not included as part of the final site assessment. Should a major contamination event occur the Owner must block off the outlet pipe of the Filterra (where the cleaned runoff drains to, such as drop inlet) and block off the throat of the Filterra. The Supplier should be informed immediately.

Maintenance Visit Summary

Each maintenance visit consists of the following simple tasks (detailed instructions below).

1. Inspection of Filterra and surrounding area
2. Removal of tree grate and erosion control stones
3. Removal of debris, trash and mulch
4. Mulch replacement
5. Plant health evaluation and pruning or replacement as necessary
6. Clean area around Filterra
7. Complete paperwork

Maintenance Tools, Safety Equipment and Supplies

Ideal tools include: camera, bucket, shovel, broom, pruners, hoe/rake, and tape measure. Appropriate Personal Protective Equipment (PPE) should be used in accordance with local or company procedures. This may include impervious gloves where the type of trash is unknown, high visibility clothing and barricades when working in close proximity to traffic and also safety hats and shoes. A T-Bar or crowbar should be used for moving the tree grates (up to 170 lbs ea.). Most visits require minor trash removal and a full replacement of mulch. See below for actual number of bagged mulch that is required in each media bay size. Mulch should be a double shredded, hardwood variety. Some visits may require additional Filterra engineered soil media available from the Supplier.

Box Length	Box Width	Filter Surface Area (ft^2)	Volume at 3" (ft^3)	# of 2 ft^3 Mulch Bags
4	4	16	4	2
6	4	24	6	3
8	4	32	8	4
6	6	36	9	5
8	6	48	12	6
10	6	60	15	8
12	6	72	18	9
13	7	91	23	12

Other sizes not listed - 1 bag per 8 ft^2 of media.

Maintenance Visit Procedure

Keep sufficient documentation of maintenance actions to predict location specific maintenance frequencies and needs. An example Maintenance Report is included in this manual.

1. Inspection of Filterra and surrounding area

- Record individual unit before maintenance with photograph (numbered). Record on Maintenance Report (see example in this document) the following:

Record on Maintenance Report the following:

Standing Water	yes | no
Damage to Box Structure	yes | no
Damage to Grate	yes | no
Is Bypass Clear	yes | no

If yes answered to any of these observations, record with close-up photograph (numbered).

2. Removal of tree grate and erosion control stones

- Remove cast iron grates for access into Filterra box.
- Dig out silt (if any) and mulch and remove trash & foreign items.

3. Removal of debris, trash and mulch

Record on Maintenance Report the following:

Silt/Clay	yes | no
Cups/ Bags	yes | no
Leaves	yes | no
Buckets Removed	_____

- After removal of mulch and debris, measure distance from the top of the Filterra engineered media soil to the top of the top slab. Compare the measured distance to the distance shown on the approved Contract Drawings for the system. Add Filterra media (not top soil or other) to bring media up as needed to distance indicated on drawings.

Record on Maintenance Report the following:

Distance to Top of Top Slab (inches)	_____
Inches of Media Added	_____

4. Mulch replacement

- Add double shredded mulch evenly across the entire unit to a depth of 3".
- Refer to Filterra Mulch Specifications for information on acceptable sources.
- Ensure correct repositioning of erosion control stones by the Filterra inlet to allow for entry of trash during a storm event.
- Replace Filterra grates correctly using appropriate lifting or moving tools, taking care not to damage the plant.

5. Plant health evaluation and pruning or replacement as necessary

- Examine the plant's health and replace if necessary.
- Prune as necessary to encourage growth in the correct directions

Record on Maintenance Report the following:

Height above Grate	_____ (ft)
Width at Widest Point	_____ (ft)
Health	healthy | unhealthy
Damage to Plant	yes | no
Plant Replaced	yes | no

6. Clean area around Filterra

- Clean area around unit and remove all refuse to be disposed of appropriately.

7. Complete paperwork

- Deliver Maintenance Report.
- Some jurisdictions may require submission of maintenance reports in accordance with approvals. It is the responsibility of the Owner to comply with local regulations.

Plant Care for Filterra® Systems

After Activation, the Contractor is responsible for proper care of the vegetation until the site is handed over to the Owner. After that, it is the Site Owner's responsibility to care for the vegetation. Contech recommends the following care for the plants:

1. To prevent transplant shock (especially if planting takes place in the hot season), it may be necessary to prune some of the foliage to compensate for reduced root uptake capacity. This is accomplished by pruning away some of the smaller secondary branches or a main scaffold branch if there are too many. Too much foliage relative to the root ball can dehydrate and damage the plant.
2. Plant staking may be required.
3. With all trees/shrubs, remove dead, diseased, crossed/rubbing, sharply crotched branches or branches growing excessively long or in wrong direction compared to majority of branches.
4. Contech recommends irrigation of the Filterra® Vegetation. The following guidance will help to ensure the vegetation is properly irrigated.

Irrigation Recommendations:

- Each Filterra® system must receive adequate irrigation to ensure survival of the living system during periods of drier weather.
- Irrigation sources include rainfall runoff from downspouts and/or gutter flow, applied water through the tree grate or in some cases from an irrigation system with emitters installed during construction.
- At Activation: Apply about one (cool climates) to two (warm climates) gallons of water per inch of trunk diameter over the root ball.
- During Establishment: In common with all plants, each Filterra® plant will require more frequent watering during the establishment period. One inch of applied water per week for the first three months is recommended for cooler climates (2 to 3 inches for warmer climates). If the system is receiving rainfall runoff from the drainage area, then irrigation may not be needed. Inspection of the soil moisture content can be evaluated by gently brushing aside the mulch layer and feeling the soil. Be sure to replace the mulch when the assessment is complete. Irrigate as needed**.
- Established Plants: Established plants have fully developed root systems and can access the entire water column in the media. Therefore irrigation is less frequent but requires more applied water when performed. For a mature system assume 3.5 inches of available water within the media matrix. Irrigation demand can be estimated as 1" of irrigation demand per week. Therefore if dry periods exceed 3 weeks, irrigation may be required.

*** Five gallons per square yard approximates 1 inch of water. Therefore for a 6' x 6 foot Filterra® approximately 20-60 gallons of applied water is needed. To ensure even distribution of water it needs to be evenly sprinkled over the entire surface of the filter bed, with special attention to make sure the root ball is completely wetted. NOTE: if needed, measure the time it takes to fill a five gallon bucket to estimate the applied water flow rate. Then calculate the time needed to irrigate the Filterra®, For example is the flow rate of the sprinkler is 5 gallons/minute then it would take 12 minutes to irrigate a 6'x6' filter.*

Plant Replacement:

In some cases, plants will require replacement. Please follow the procedures below to ensure a properly functioning Filterra® system.

1. Remove the existing plant, and leave as much of the Filterra® media in place as possible.
2. Select a replacement per the Filterra® Activation Package.
3. Prior to removing the plant from the container, ensure the soil moisture is sufficient to maintain the integrity of the root ball. If needed, pre-wet the container plant.
4. Cut away any roots which are growing out of the container drain holes.
5. Plant(s) should be carefully removed from the pot by gently pounding on the sides of the container with the fist to loosen root ball. Then carefully slide out. Do not lift plant(s) by trunk as this can break roots and cause soil to fall off. Extract the root ball in a horizontal position and support it to prevent it from breaking apart. Alternatively, the pot can be cut away to minimize root ball disturbance.
6. Excavate a hole with a diameter 4" greater than the root ball, gently place the plant(s).
7. Plant the tree/shrub/grass with the top of the root ball 1" above surrounding media to allow for settling.
8. All plants should have the main stem centered in the tree grate (where applicable) upon completion of installation.
9. Reinstall or add mulch to a depth of 3" per Contech's mulch specifications for Filterra® systems.

Maintenance Checklist

Drainage System Failure	Problem	Conditions to Check	Condition that Should Exist	Actions
Inlet	Excessive sediment or trash accumulation.	Accumulated sediments or trash impair free flow of water into Filterra.	Inlet should be free of obstructions allowing free distributed flow of water into Filterra.	Sediments and/or trash should be removed.
Mulch Cover	Trash and floatable debris accumulation.	Excessive trash and/or debris accumulation.	Minimal trash or other debris on mulch cover.	Trash and debris should be removed and mulch cover raked level. Ensure bark nugget mulch is not used.
Mulch Cover	"Ponding" of water on mulch cover.	"Ponding" in unit could be indicative of clogging due to excessive fine sediment accumulation or spill of petroleum oils.	Stormwater should drain freely and evenly through mulch cover.	Recommend contact manufacturer and replace mulch as a minimum.
Vegetation	Plants not growing or in poor condition.	Soil/mulch too wet, evidence of spill. Incorrect plant selection. Pest infestation. Vandalism to plants.	Plants should be healthy and pest free.	Contact manufacturer for advice.
Vegetation	Plant growth excessive.	Plants should be appropriate to the species and location of Filterra.		Trim/prune plants in accordance with typical landscaping and safety needs.
Structure	Structure has visible cracks.	Cracks wider than 1/2 inch or evidence of soil particles entering the structure through the cracks.		Vault should be repaired.
Maintenance is ideally to be performed twice annually.				

Filterra Inspection & Maintenance Log

Filterra System Size/Model:_____ **Location:** _____

Date	Mulch & Debris Removed	Depth of Mulch Added	Mulch Brand	Height of Vegetation Above Grate	Vegetation Species	Issues with System	Comments
1/1/17	*5 – 5 gal Buckets*	*3″*	*Lowe's Premium Brown Mulch*	*4′*	*Galaxy Magnolia*	*- Standing water in downstream structure*	*- Removed blockage in downstream structure*

Appendix 1 – Filterra® Vault Activation Package

FILTERRA® VAULT ACTIVATION PACKAGE

CONTECH® ENGINEERED SOLUTIONS

The Filterra system will be (or has been) delivered to you with protection in place to resist intrusion of construction related sediment which can contaminate the biofiltration media and result in inadequate system performance. These protection devices are intended as a best practice and cannot fully prevent contamination. It is the purchaser's responsibility to provide adequate measures to prevent construction related runoff from entering the Filterra system.

Included with your purchase is Activation of the Filterra system by the manufacturer as well as a 1-year warranty from delivery of the system and a Final Site Assessment (assessment of unit condition, mulch replacement, debris removal, and pruning of vegetation) scheduled between 6 months and 1 year after Activation, upon request.

Activation of the Filterra system is a procedure completed by the manufacturer to place the system into working condition. This involves the following items:

- Removal of construction runoff protection devices
- Planting of the system's vegetation (provided by the purchaser)
- Placement of pretreatment mulch layer using mulch acceptable for use in Filterra systems.

Activation MUST be provided by the manufacturer to ensure proper site conditions are met for Activation, proper installation of the vegetation, and use of pretreatment mulch acceptable for use in Filterra systems. The purchaser should request Activation from Contech after the site is stabilized, but prior to turning over the site to the owner. Please allow 1-2 weeks to schedule Activation.

The purchaser must ensure that the site is acceptable for Filterra Activation. A checklist (included as page 3 of this document must be completed and submitted to the Contech Activation Coordinator. The minimum 4 requirements for Filterra Activation are as follows:

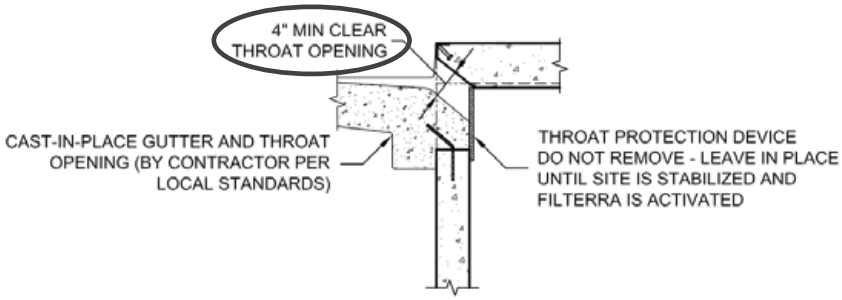
1. The purchaser must have sourced vegetation meeting the requirements outlined in "Plant Selection for Filterra Systems" starting on page 4 of this document.

* *UNPREPARED SITE FEE NOTE: A charge of $1500.00 will be invoiced for each activation visit requested by customer where Contech determines that the site does not meet the conditions required for Activation AND/OR acceptable plants are not provided by the contractor. ONLY Contech authorized representatives can perform Activation of Filterra systems; unauthorized activations will void the system warranty and waive manufacturer supplied activation and final inspection.*

2. The site landscaping must be fully stabilized, i.e. full landscaping installed and some grass cover (not just straw and seed) is required to reduce sediment transport. Construction debris and materials should be removed from surrounding area.

3. Final paving must be completed. Final paving ensures that paving materials will not enter and contaminate the Filterra system during the paving process, and that the plant will receive runoff from the drainage area, assisting with plant survival for the Filterra system.

4. Where curb inlets are included as part of the Filterra system, Filterra throat opening should be at least 4" clear in order to ensure adequate capacity for inflow and debris.



* *UNPREPARED SITE FEE NOTE: A charge of $1500.00 will be invoiced for each activation visit requested by customer where Contech determines that the site does not meet the conditions required for Activation AND/OR acceptable plants are not provided by the contractor. ONLY Contech authorized representatives can perform Activation of Filterra systems; unauthorized activations will void the system warranty and waive manufacturer supplied activation and final inspection.*

Filterra® Vault Activation Checklist

CONTECH ENGINEERED SOLUTIONS

Project Name:_________________________________ Company: _________________________________

Site Contact Name: _________________________________ Site Contact Phone/Email: _________________________

Site Owner/End User Name:_____________________ Site Owner/End User Phone/Email: _________________________

Preferred Activation Date: _____________________________ (provide 2 weeks minimum from date this form is submitted)

Site Designation	Top Opening Type	Final Pavement Complete	Landscaping Complete / Grass Emerging	Construction materials / Piles / Debris Removed	Throat Opening Measures 4" Min. Height (where applicable)	Vegetation Sourced by Contractor
	☐ Tree Grate ☐ Full Grate (No tree opening) ☐ Bioscape Vault (Open Planter)	☐ Verified	☐ Verified	☐ Verified	☐ Verified	☐ Species on FT Plant List ☐ Container Grown (15 gal. max) ☐ 4' Tall Min. (Tree grate units only) ____ Qty provided
	☐ Tree Grate ☐ Full Grate (No tree opening) ☐ Bioscape Vault (Open Planter)	☐ Verified	☐ Verified	☐ Verified	☐ Verified	☐ Species on FT Plant List ☐ Container Grown (15 gal. max) ☐ 4' Tall Min. (Tree grate units only) ____ Qty provided
	☐ Tree Grate ☐ Full Grate (No tree opening) ☐ Bioscape Vault (Open Planter)	☐ Verified	☐ Verified	☐ Verified	☐ Verified	☐ Species on FT Plant List ☐ Container Grown (15 gal. max) ☐ 4' Tall Min. (Tree grate units only) ____ Qty provided
	☐ Tree Grate ☐ Full Grate (No tree opening) ☐ Bioscape Vault (Open Planter)	☐ Verified	☐ Verified	☐ Verified	☐ Verified	☐ Species on FT Plant List ☐ Container Grown (15 gal. max) ☐ 4' Tall Min. (Tree grate units only) ____ Qty provided

Attach additional sheets as necessary.

NOTE: A charge of $1500.00 will be invoiced for each activation visit requested by customer where Contech determines that the site does not meet the conditions required for activation AND/OR acceptable plants are not provided by the contractor. ONLY Contech authorized representatives can perform activation of Filterra systems; unauthorized activations will void the system warranty and waive manufacturer supplied activation and final inspection.

____   _________________________

Signature   Date

** UNPREPARED SITE FEE NOTE: A charge of $1500.00 will be invoiced for each activation visit requested by customer where Contech determines that the site does not meet the conditions required for Activation AND/OR acceptable plants are not provided by the contractor. ONLY Contech authorized representatives can perform Activation of Filterra systems; unauthorized activations will void the system warranty and waive manufacturer supplied activation and final inspection.*

filterra®

Planting Selection for Filterra® Vault Systems

All Filterra systems require vegetation for proper long-term performance. As indicated in the Activation Package, the Contractor is responsible for sourcing the proper vegetation prior to Activation. Contech or a Contech representative will install the vegetation during the Activation process.

Contractors should identify the Top Opening style for each Filterra requiring Activation on the Activation Checklist. Contech offers three types, which are detailed on page 5 of this document:

- Vault with Tree Grate
- Vault with Full Grate
- Bioscape / Open Planter

Contractors must ensure the vegetation meets the following 4 requirements:

1. Select plant(s) as specified in the engineering plans and specifications AND that are listed on Contech's Configuration Specific Plant Lists**.
2. All plants MUST be container-grown in nursery containers no larger than 15 gallons. Crated and/or Ball/Burlap plants are NOT permitted.
3. For Vaults with Tree Grates, plant height must be 4' Minimum, from soil surface to top of plant.
4. Provide plant quantities per the following guidance:
   - Vault with Tree Grate – 1 per Tree Grate
   - Vault with Full Grate – 4-5 Small or Extra Small Grasses per Full Grate
   - Bioscape – Quantities should be selected based on plant palette options found starting on page 6 of this document.

If Contech or Contech's representative shows up for Activation and any of the 4 requirements above are not met, Activation cannot be performed and the Contractor will be billed a $1,500 Unprepared Site fee*.

Some additional vegetation recommendations for the best possible Activation and Installation are as follows:

- Select plant(s) with full root development but not to the point where root bound.
- For Filterra systems with a Tree Grate, select plants with taller trunks. Lower branches can be pruned away provided there are sufficient branches above the grate for tree or shrub development.
- For Filterra systems with a Tree Grate, plant(s) should have a single trunk at installation.
- Plant species shall not have a mature height greater than 30 feet.

** In some cases, Contech may consider alternate plant species as approved by the Product Manager. Please list the plant name in the space below and submit this sheet to your Contech Activation Coordinator. If the plant species is approved, either the Product Manager or the Activation Coordinator will sign the form and return to you for inclusion with your Activation Checklist.

Requested Plant Species: _____ Approved: _____

Date: _____

** UNPREPARED SITE FEE NOTE: A charge of $1500.00 will be invoiced for each activation visit requested by customer where Contech determines that the site does not meet the conditions required for Activation AND/OR acceptable plants are not provided by the contractor. ONLY Contech authorized representatives can perform Activation of Filterra systems; unauthorized activations will void the system warranty and waive manufacturer supplied activation and final inspection.*

Filterra® Top Opening Examples

Filterra® Vault with Tree Grate

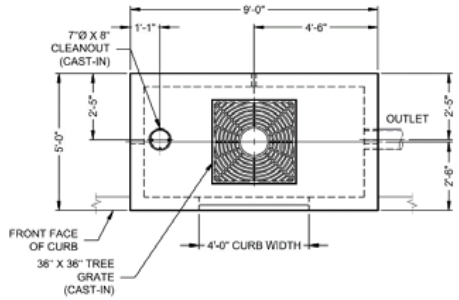


Figure 1a. Filterra with Tree Grate Drawing

Figure 1b. Filterra with Tree Grate Photo (not yet planted)

Filterra® Vault with Full Grate

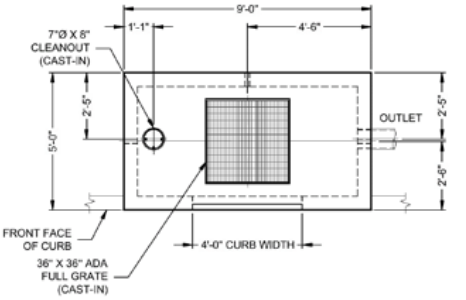


Figure 2a. Filterra with Full Grate Drawing

Figure 2b. Filterra with Full Grate Photo

Filterra® Bioscape Vault

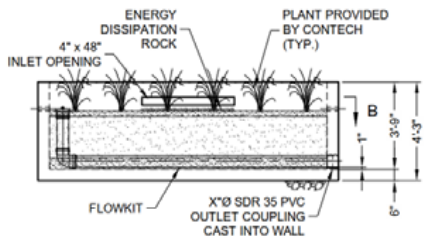


Figure 3a. Filterra Bioscape Vault Drawing

Figure 3b. Filterra Bioscape Vault Photo

* *UNPREPARED SITE FEE NOTE: A charge of $1500.00 will be invoiced for each activation visit requested by customer where Contech determines that the site does not meet the conditions required for Activation AND/OR acceptable plants are not provided by the contractor. ONLY Contech authorized representatives can perform Activation of Filterra systems; unauthorized activations will void the system warranty and waive manufacturer supplied activation and final inspection.*

Filterra® Bioscape Vault Plant Palettes

KEY: (refer to plant lists for species sizing)

A. EXTRA SMALL GRASS
- Up to 2' mature spread
- 1-2 gallon typical (1 gal. minimum)

B. SMALL GRASS/SHRUB
- 2'-4' mature spread
- 1-7 gallon typical

C. MEDIUM SHRUB
- 4'-6' mature spread
- 1-7 gallon typical

D. LARGE SHRUB OR EXTRA LARGE SHRUB OR TREE
- 6' mature spread and greater, 30' max. mature height
- Up to 15 gallon maximum

NOTE: *For larger vaults and in-ground Filterra Bioscape systems, palettes can be scaled (i.e. Qty 6 of the 22x8 Palette can be used for a 1056 sf Filterra Bioscape).*

MIX & MATCH SUBSTITUTION OPTIONS:

1 Large Shrub or Extra Large Shrub or Tree
- 2 Medium Shrubs
- 4 Small Grass/SHrubs
- 12 Extra Small Grasses

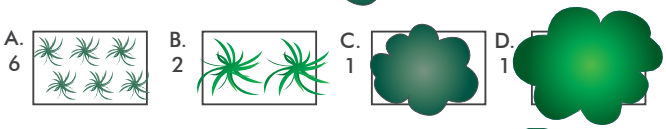
1 Medium Shrub
- 2 Small Grass/Shrubs
- 6 Extra Small Grasses

1 Small Grass/Shrub
- 3 Extra Small Grasses

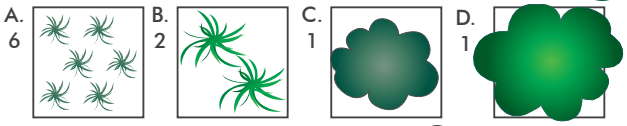
4x4 Media Bay

4x6/6x4 Media Bay

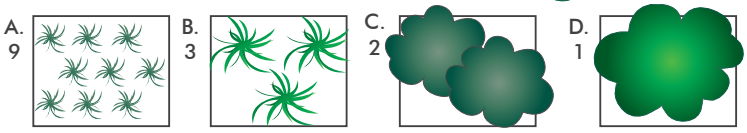
4x8/8x4 & 4.5x7.83/7.83x4.5 Media Bay



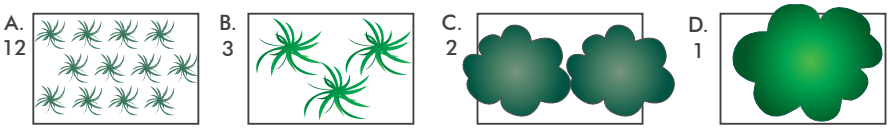
6x6 Media Bay



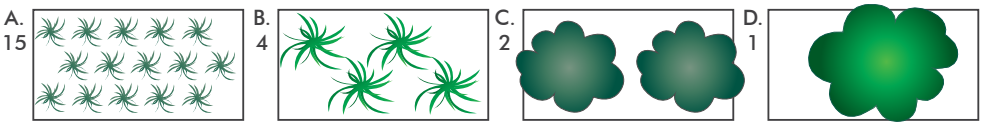
6x8/8x6 Media Bay



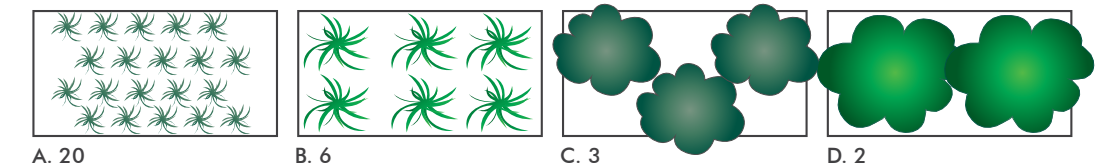
6x10/10x6 & 8x8 Media Bay



6x12/12x6 Media Bay

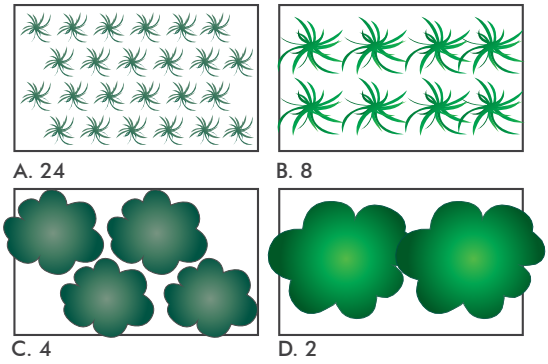


7x13/13x7/12x8 & 14x8 Media Bay



** UNPREPARED SITE FEE NOTE: A charge of $1500.00 will be invoiced for each activation visit requested by customer where Contech determines that the site does not meet the conditions required for Activation AND/OR acceptable plants are not provided by the contractor. ONLY Contech authorized representatives can perform Activation of Filterra systems; unauthorized activations will void the system warranty and waive manufacturer supplied activation and final inspection.*

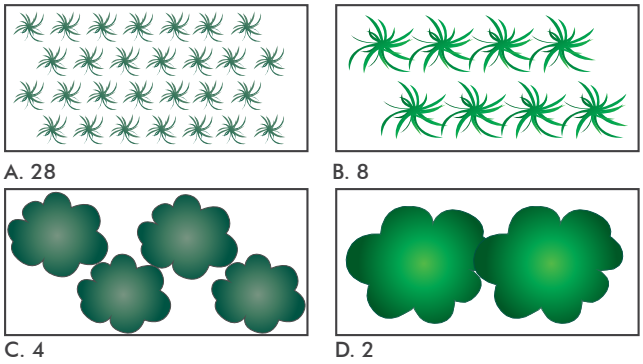
16x8 & 15x9 Media Bay



A. 24 B. 8

C. 4 D. 2

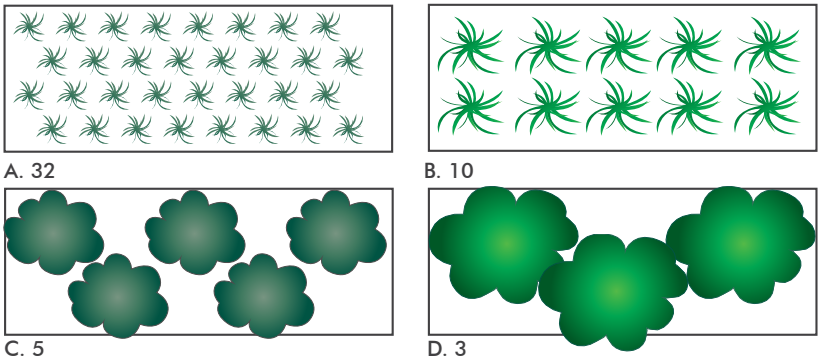
18x8 Media Bay



A. 28 B. 8

C. 4 D. 2

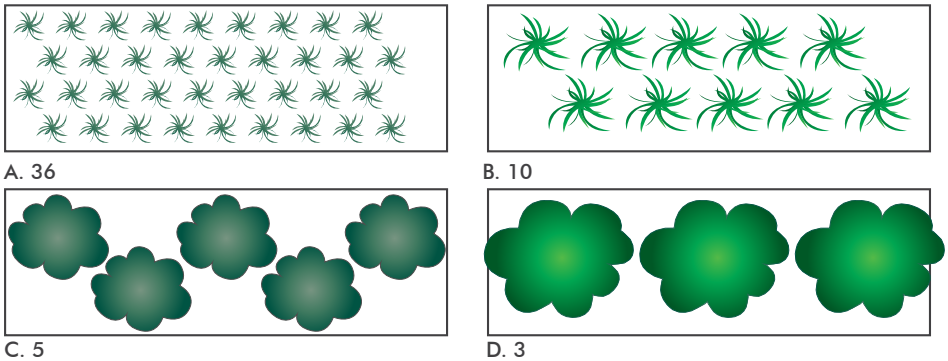
20x8 Media Bay



A. 32 B. 10

C. 5 D. 3

22x8 Media Bay



A. 36 B. 10

C. 5 D. 3

* *UNPREPARED SITE FEE NOTE: A charge of $1500.00 will be invoiced for each activation visit requested by customer where Contech determines that the site does not meet the conditions required for Activation AND/OR acceptable plants are not provided by the contractor. ONLY Contech authorized representatives can perform Activation of Filterra systems; unauthorized activations will void the system warranty and waive manufacturer supplied activation and final inspection.*

Appendix 2 – Filterra® Tree Grate Opening Expansion Procedure

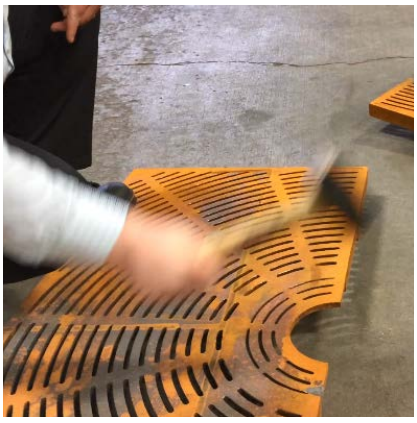
The standard grates used on all Filterra configurations that employ Tree Grates are fabricated with a 6″ opening that is designed with a breakaway section that can be removed, allowing the grate opening to be expanded to 12″ as the tree matures and the trunk widens.

The following tools are required to expand the opening:

- Mini sledgehammer (3 lb. or greater)
- Safety Glasses / Goggles

The following guidelines should be followed to properly expand the tree opening from 6″ to 12″:

1. Remove the grate from the Filterra frame, place it flat on a hard surface, and support the grate by stepping on the edge or using other weighted items such as a few mulch bags if this is being done during a Filterra maintenance event. Put on safety glasses/goggles. Align the mini sledgehammer as shown in the figure to the left. The head of the sledgehammer should be aimed just inside the wide cast iron bar between the larger grate section and the breakaway section.



2. Repeatedly hit the grate at this spot with the mini sledgehammer.

3. After several hits, the breakaway section should snap cleanly off of the larger grate section. Reinstall the grate into the Filterra grate frame. Recycle or dispose of the breakaway section per local guidelines.

Notes

Notes

Notes

9100 Centre Pointe Drive, Suite 400
West Chester, OH 45069
info@conteches.com | 800-338-1122
www.ContechES.com

PDF 1/23

CMA ENGINEERS, INC.
CIVIL | ENVIRONMENTAL | STRUCTURAL

35 Bow Street
Portsmouth, New Hampshire
03801-3819

P: 603|431|6196
www.cmaengineers.com

March 05, 2024

Maxim Zakian, Town Planner
Town of Kittery
200 Rogers Road
Kittery, Maine 03904

RE: Town of Kittery, Planning Board Services
Maine Meat Butcher & Restaurant, 5 Whipple Road Review
Tax Map 9, Lot 134
CMA #591.175

Dear Max:

CMA Engineers has received the following information for Assignment #175, review of the proposed retail and restaurant at 5 Whipple Road (Tax Map 9, Lot 134):

1) "Maine Meat Butcher & Restaurant, 5 Whipple Road, Kittery, Me 03904" by Attar Engineering, Inc., dated 12/28/2023
2) Minor Site Plan Review Application and supporting materials, dated January 30, 2024
3) "Stormwater Management Study" by Attar Engineering, Inc., dated February 13, 2024, and supporting materials

The project consists of one lot (Map 9, Lot 134) with an area of approximately 0.33 acres; several conveyances grant land to the applicant for a total new area of the subject parcel of 0.51 acres. The lot is located in the Business Local (B-L) district. There are no wetlands on site. The project includes the redevelopment and expansion of the existing single-story building and the removal of elements associated with the former use as a gas station – concrete storage tanks, fueling island and canopy.

The development will be served by the existing public sewer and Kittery Water District will provide water with size upgrades as necessary. An existing closed stormwater system that crosses the site will be retained and tied into. On-site stormwater management is proposed through two bioretention vaults.

We have reviewed the information submitted for conformance with the Kittery Land Use and Development Code (LUDC) and general engineering practices and offer the comments below that correspond directly to the Town's Ordinances.

16.7 General Development Requirements

16.7.11 Performance Standards and Approval Criteria

16.7.11.A. Water supply

The applicant has indicated that the existing water service will be used and upgraded if necessary. The size, material and location of the existing water service should be shown on the plan. Is the applicant proposing to share the one service for the two businesses? The applicant should secure approval of the proposed water service(s) design from Kittery Water District.

16.7.11.B. Sewage Disposal

The applicant has indicated that the existing sewer service will be used and upgraded if necessary. The size, material and location of the existing sewer service should be shown on the plan. Is the applicant proposing to share the one service for the two businesses? The applicant should secure approval of the proposed sewer service(s) from Kittery sewer services.

Is an oil/water separator proposed for the restaurant use?

16.7.11.C. Stormwater and surface drainage

The proposed stormwater management system uses two bioretention vaults that tie into the off-site closed drainage system.

The applicant should secure approval of the connection to the Town's MS4 system.

In addition, there is existing drainage that crosses the lot. The applicant is proposing to change the existing catch basin covers to drain manhole covers.

We have the following remaining comment on the drainage analysis and design:

1. Has the applicant assessed the condition of the downstream drainage system?
2. Are easements existing and/or required for the existing closed drainage on-site?
3. The O&M procedures should be compiled in a manual that specifies the frequency of maintenance and other information in conformance with 16.7.11.D.

16.7.11.F. Parking and loading

16.7.11.F.(1)(e). – Traffic flow should be shown on the plan.

16.7.11.F.(3)(b). – The dimensions of the loading bay should be shown on the plan.

16.7.11.F.(4)(g). – The applicant should provide a landscape plan and parking landscaping calculations in conformance with the Ordinance.

16.7.11.F.(4)(n). – The three parallel parking spaces to the north of the building are not dimensioned. The leader "Prp. 9'x19' parking space (typ., x24)" indicates that all spaces are 19' deep. These three spaces should be 22' deep. Please confirm the appropriate depth and label the spaces accordingly.

The aisle width to the north of the building should be dimensioned in conformance with Table 2 Parking Space Design.

16.7.11.G Utilities

No proposed utilities are shown. Is the intent to reuse the existing overhead service? Will this be shared between the two businesses?

General Engineering

1. The proposed project includes demolition of gas station features. Has a soil/environmental assessment been done on the site? Provide relevant information on any required or proposed remediation.
2. Has the applicant applied for waivers of any standards? If so, these should be listed on the plans.

We have the following comments on the plans:

1. A cover page that is separate from the Overall Site Plan would be helpful.
2. The plan set should include a landscape plan.
3. The plan set should include a demolition plan.

Sheet 1 - Overall Site Plan

1. Are the dimensions of the ADA parking space different from the other spaces? If so, please dimension the space. If not, please amend the leader "Prp. 9'x19' parking space (typ., x24)". Additionally, the parallel parking spaces should be 22' deep. Please confirm this dimension.
2. Label the aisle width to the north of the three parallel parking spaces to the north of the building.
3. General Notes 10 indicates that Kittery Water District is Town water. Kittery Water District is a private water utility company. The note should be amended.
4. General Note 3, Tree Planting Obligations should be updated to indicate the number of trees proposed.
5. The existing street side tree referenced in General Note 2 should be shown on the plan.
6. Is there significance to the two different existing pavement hatches on Whipple Road?
7. Is traffic flow restricted to the north of the buildings? It does not appear that there is enough width for two-way traffic. Signs and/or pavement markings should indicate the proposed traffic pattern.
8. The applicant should show conformance with parking landscaping requirements as detailed in General Notes 11.
9. The proposed pavement hatch should be shown on the north side of the lot.
10. Show the location of the handicap parking sign.

Sheet 2 - Existing Conditions Plan

1. The existing fire hydrant referenced in General Notes 12 on Sheet 1 should be shown on the plan.
2. The existing water and sewer services, including materials and sizes, should be shown on the plan.
3. The limits of the existing pavement should be shown on the plan.

4. The pipe materials and inverts of the sewer main should be shown on the plan.
5. The material of the existing water main should be shown on the plan.
6. Existing gate valves for the water main should be shown on the plan.

Sheet 3 – Grading and Utilities Plan

1. The existing fire hydrant indicated in the legend is not shown on the plan.
2. Have the conditions of the existing catch basins on the south of the site and off site in Whipple Road to the east been assessed? What sizes are they and is it sufficient in size and condition to be tied into?
3. The existing sewer and water services should be shown on the plan (size, materials, etc.). Include notes on reuse, etc.
4. The elevation at the sidewalk/parking lot connection on site should be shown.
5. Proposed utilities should be shown.
6. The vertical distance between the Filterra pipe and the existing sewer should be verified.
7. Are the existing overhead utilities to remain or are new services proposed? Are both businesses sharing one service?
8. Are both businesses to share one water and sewer service?

Sheet 5 – Site Details

1. The Utility Trench Patch Detail should be updated to include Kittery DPW specs instead of referencing them.
2. There are multiple details missing from the plan set including all water and sewer details, sidewalk details, etc. Please provide these.
3. The locations of proposed erosion control measures should be shown on the plans.
4. Where is the extruded concrete curb detail located?
5. The Filterra details should be included as part of the plan set.

Sheet 7 – Stormwater: Existing Conditions

1. The inverts of the catch basin downstream of Pond 1P should be shown on the plan.
2. The inverts of the catch basin downstream of Pond 5P should be shown on the plan.

Sheet 8 – Stormwater: Developed Conditions

1. The Legend erroneously indicates that the pond symbol is for level spreaders.
2. Pond 5P should be labelled on the plan.
3. The inverts of the catch basin downstream of Pond 1P should be shown on the plan.
4. The inverts of the catch basin downstream of Pond 5P should be shown on the plan.

Should you have any questions, please do not hesitate to call.

Very truly yours,

CMA ENGINEERS, INC.

Jodie Bray Strickland
Senior Project Engineer

Philip A. Corbett, P.E.
Project Manager

cc: Mike Sudak, Attar Engineering

TOWN OF KITTERY, MAINE

SEWER DEPARTMENT

200 Rogers Road, Kittery, ME 03904

Telephone: (207) 439-4646 Fax: (207) 439-2799

December 28, 2023

Re: Treatment Plant Capacity letter
5 Whipple Road
Kittery, ME 03904

This letter is to confirm the capacity of sanitary sewer discharge for the proposed Project at 5 Whipple Road in the Town of Kittery Maine. The sewer system (piping and pumping stations) and the treatment plant will have the capacity and ability to handle the discharge flow requiring treatment and disposal should the project get all necessary approvals from the Town of Kittery and the Kittery Sewer Department.

This letter is only confirming the Sewer Departments capacity for increased flow not project approval.

If you have further questions or concerns, please contact me.

Sincerely,

Timothy Babkirk
Town of Kittery
Superintendent of Sewer Services
1-207-439-4646
tbabkirk@kitteryme.org